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Tier 1 Endangered Species Act Monitoring and NPDES Compliance Monitoring Studies Conducted in 2005 Potlatch Lewiston Facility

Submitted to:

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Submitted by:

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1.0 INTRODUCTION

The Potlatch Corporation - Lewiston Facility ("the Facility") is owned and operated by Potlatch Corporation, which has its headquarters in Spokane, Washington. The Facility is located approximately one mile east of the Clearwater Memorial Bridge in Lewiston, Idaho. It is situated on the south bank of the Clearwater River approximately three miles east of the confluence of the Clearwater and Snake River. The location of the Lewiston complex is shown in Figure 1-1. The Facility discharges treated wastewater via a submerged 48 inch diameter, 400 foot long multiport diffuser located in the confluence. The diffuser is referred to as Outfall 001 ("the Outfall"). EPA has recently reissued Potlatch's National Pollutant Discharge Elimination System (NPDES) Permit No. ID00001163, authorizing discharge from the Outfall, to the Snake River and seeps from the secondary treatment pond to the Clearwater River. The Facility discharges approximately 34 million gallons a day of treated effluent from the Outfall into the Snake River under NPDES permit No. ID00001163, which was re-issued by EPA on May 1, 2005.

Because EPA's re-issuance of the Facility's NPDES permit constituted a discretionary action that could beneficially or adversely affect threatened and endangered species or their critical habitat in the vicinity of the discharge, EPA was required to consult with the U. S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NOAA Fisheries) (collectively referred to as "the Services") as specified in the Endangered Species Act. EPA prepared a Biological Evaluation (BE) to evaluate whether the reissuance of the permit might affect species and/or their critical habitat under the jurisdiction of both the USFWS and NOAA Fisheries. Subsequent to NOAA Fisheries' and USFWS' review of the BE, the two agencies prepared Biological Opinions (BO) consistent with the requirements of the ESA. NOAA Fisheries' BO concluded that the reissuance of the permit "is not likely to jeopardize the continued existence of Snake River steelhead, Snake River spring/summer and fall chinook salmon, and Snake River sockeye salmon, nor result in the destruction or adverse modification of designated critical habitat for Snake River spring/summer and fall chinook salmon and Snake River sockeye salmon."

Although the NOAA Fisheries BO concluded that the permit reissuance would not jeopardize the continued existence of the listed species, the BO specified non-discretionary terms and conditions which must be met by EPA and Potlatch to minimize "take" of listed species as a result of permit reissuance. One of the non-discretionary terms and conditions specified in the BO was implementation of a monitoring and assessment plan to characterize conditions in effluent, receiving water, sediment, and biological media in the vicinity of the Facility. Attachment 1 to the permit provides a summary of the required monitoring and a schedule for it's implementation. The monitoring plan summary identifies several Tier 1 studies that must be performed during the first two years of the permit, as well as Tier 2 studies that may or may not be performed during later years of the permit, depending upon the outcomes of the Tier 1 studies.

The purpose of this report is to present the results of ESA Tier 1 studies undertaken during 2005 that evaluate effluent and natural waters above and below the Facility. In particular, this sampling was performed to fulfill requirements of the Surface Water and Effluent Study, Benthic Community Study, and the Receiving Water Monitoring Study, that are described in detail in Appendix A, Appendix D, and Appendix H, respectively, of the Quality Assurance Project Plan (QAPP) for Tier 1 Endangered Species Act and NPDES Permit Compliance Monitoring (AMEC, 2005). While sediment samples from the Snake River and Clearwater River were collected during sediment sampling conducted by Anchor Environmental during the summer of 2005. The samples were submitted to the laboratory for benthic community analysis. However, the results from this study were not reported to Potlatch, Anchor or AMEC until January, 9 2006. Therefore, the results of this study will not be included in this report. These results will be reported at a later date either as a supplement to this monitoring report or as part of the January 2007 monitoring report.

Surface Water and Effluent Study principally addresses the measurement of trace organic compounds and dioxins/furans (some of which are required for compliance with the NPDES permit). To do this, a specialized sampling technique known as High Volume Sampling was employed. The Receiving Water Monitoring Study primarily evaluates conventional water quality parameters that are routinely measured in the field (such as BOD, temperature, pH, and TSS). Both studies used an upstream/downstream study design, and the stations that were selected and sampled during the 2005 sampling event are shown in Table 1 and on Figure 1.

2.0 FIELD SAMPLING AND ANALYTICAL METHODS

The field sampling methods and laboratory analytical methods used to collect and analyze samples for the Quarterly Surface Water and Effluent Study and the Weekly Receiving Water Monitoring Study are described in this section.

2.1 Field Sampling

Field sampling methods for collecting river water and effluent samples are described below for the Weekly Receiving Water Monitoring Study and the Quarterly Surface Water and Effluent Study. For both weekly and quarterly samples, chain of custody forms, provided by the analytical labs, were completed and accompanied all samples shipped to the labs.

2.1.1 Weekly Receiving Water Monitoring Study Sampling Methods

Water column sampling was conducted at every sample site each week during the monitoring period. Field-measured water quality data and water samples for water quality analyses were collected. Collections typically took 2 days per week to complete and occurred during: 8/3-4/05, 8/10-11/05, 8/17-18/05, 8/24-25/05, 8/30-31/05, 9/7-8/05, 9/15/05, 9/21-22/05, 9/27-28/05, 10/5-6/05, 10/11-12/05, 10/19-20/05, and 10/25-26/05. For the remainder of this report, collection dates will indicate the first day of collection for any given week (e.g., samples collected on 8/3 or 8/4 will be indicated as 8/3/05).

The parameters selected for the weekly monitoring are grouped as follows to facilitate discussion of the collection methods and results:

- Field-measured parameters: physical and chemical properties measured in the filed using water quality monitoring instruments: velocity, pH, dissolved oxygen (DO), and temperature;
- Conventional parameters: laboratory measured parameters that are typically monitored in water quality studies: total suspended solids (TSS) and biochemical oxygen demand (BOD);
- Nutrients: The nutrient parameters measured in this study included ammonia nitrogen (NH_3-N), nitrate-nitrite nitrogen (NO_3/NO_2-N), total Kjedahl nitrogen (TKN), total phosphorus, and orthophosphate phosphorus (Ortho-PO_4).

The sampling methods used in the field closely followed those described in Appendix H, Sampling and Analysis Plan for Receiving Water Monitoring, of the Quality Assurance Project Plan (QAPP). Three deviations from the QAPP were noted: in two instances the water quality meter failed to operate properly and parameters were not reported, in one instance the flow meter was damaged and readings were not available, in one instance the water quality meter was not calibrated by Potlatch prior to field operation. These deviations were recorded in the field logs and reported to Potlatch.

2.1.2 Quarterly Surface Water and Effluent Study Sampling Methods

Sampling for the quarterly monitoring was conducted from 8/24/05 to 8/31/05 and from 11/13/05 to 11/19/05. Because analytical results from the second round of quarter sampling conducted in November are not yet available, this report presents only the results of the first round conducted in August. November 2005 sampling data will be presented in the January 2007 Data Report.

Field-measured water quality data and water samples for water quality analyses were collected at each sample location on the Snake River and Clearwater River at mid-depth. Effluent samples were taken at the Facility at the aeration basin. All high-volume samples were collected using the Infiltrex 300 high volume water sampler. Other samples were collected using the Infiltrex 300 as a standard pump (i.e., the high-volume filters and resin columns were bypassed). All field personnel wore powder free latex gloves when handling sampling equipment and samples.

Three types of samples were collected for quality control: trip blanks, field blanks, and field duplicates. A set of trip blanks (sample vials filled with ultrapure lab water) accompanied sample bottles to and from the field. One equipment blank was collected during the sampling event. All sampling equipment was decontaminated according to methods described in the Quality Assurance Project Plan (QAPP) and then rinsed with ultrapure lab water. This rinsate was then sampled to produce the equipment blank.

The sampling methods used in the field closely followed those described in Appendix A, Sampling and Analysis Plan for Surface Water and Effluent Study, of the QAPP. A few minor deviations relating to the use of the high volume sampler, the Infiltrex 300, occurred during the sampling event. For high volume samples, two samples were taken per day on some days, although the QAPP stated only one sample would be taken per day. The QAPP also stated that up to four fiberglass filters would be needed, to collect suspended solids, per sample. During the sampling event, each sample required only one filter. Finally, rather than use a Kemmerer or other grab sampling device for non-high volume samples, the Infiltrex 300 was used as a standard pump to obtain these samples.

The parameters selected for the quarterly monitoring are:

- Resin Acids: Abietic, Dehydroabietic, Isopimaric, Neoabietic, Palustric, Pimaric, Sandaracopimaric, and Total 12/14 Chlorodehydroabietic acid;
- Phytosterols: B-sisosterol, Campesterol, Stigmastanol, Stigmasterol, and Retene;
- Chlorophenolics: 2,4,6-Trichlorophenol, 2,4,5-Trichlorophenol, 2,3,4,6-Tetrachlorphenol, 3,4,6-Trichlorocatechol, 3,4,5-Trichlorocatechol, 3,4,6-Trichoroguaiacol, 3,4,5-Trichloroguaiacol, Trichlorosyringol, 4,5,6-Trichloroguaiacol, Pentachlorophenol, Tetrachloroguaiacol, and Tetrachlorocatechol;
- Chloroform;
- Dioxins: 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD), 1,2,3,7,8-Pentachlorodibenzodioxin (1,2,3,7,8-PeCDD), 1,2,3,4,7,8-Hexachlorodibenzodioxin (1,2,3,7,8-HxCDD), 1,2,3,6,7,8-Hexachlorodibenzodioxin (1,2,3,6,7,8-HxCDD), 1,2,3,7,8,9-Hexachlorodibenzodioxin (1,2,3,7,8,9-HxCDD), 1,2,3,4,6,7,8-

Heptachlorodibenzodioxin (1,2,3,4,6,7,8-HpCDD), and Octachlorodibenzodioxins (OCDD); and

- Furans: 2,3,7,8-Tetrachlorodibenzofuran (2,3,7,8-TCDF), 1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-PeCDF), 2,3,4,7,8-Pentachlorodibenzofuran (2,3,4,7,8-PeCDF), 1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-HxCDF), 1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-HxCDF), 1,2,3,7,8,9-Hexachlordibenzofuran (1,2,3,7,8,9-HxCDF), 2,3,4,6,7,8-Hexachlorodibenzofuran (2,3,4,6,7,8-HxCDF), 1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF), 1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-HpCDF), and Octachlordibenzofurans (OCDD).

3.0 DATA HANDLING METHODS

Procedures for handling in the field and at the analytical laboratory are described below.

3.1 Field Data

Data collected during field activities were recorded in field notebooks and then entered into database format. Because water quality measurements were taken at several depths at one or more points at a sample location, all measurements are summarized as averages to provide an overview of conditions present at a location. The mean water quality data were then summarized in two ways: by location and by sampling day. Summaries consist of calculated maximum, minimum, mean, and median values as well as standard deviations and coefficients of variation for each parameter. Appendix 1 contains the field data and summaries.

3.2 Analytical Data

Data received from the laboratories were entered into database format, including data qualifiers. When duplicates were collected, the results of the two samples are reported as the mean concentration of the two. If the resulting mean was less than the laboratory detection limit for that analyte, the result was recorded as nondetect (ND).

Analytical data collected for the Weekly Receiving Water Monitoring Study and the Quarterly Surface Water and Effluent Study have been summarized separately. For each Study, data have been analyzed in two ways: by sample site and by sample day. Summaries consist of calculated maximum, minimum, median, and mean values. Undetected values were reported as one half of the detection limit when a parameter was detected at least once at a sample site. Appendix 2 contains the data reported from the analytical laboratories. Validation reports are shown in Appendix 3.

4.0 RESULTS

This section reports the results of the 2005 Weekly Receiving Water Monitoring Study and the August 2005 round of the Quarterly Surface Water and Effluent Study.

4.1 Field-Measured Parameters

The parameters measured in the field were water velocity, pH, dissolved oxygen (DO), and temperature. These parameters were measured at each location during each sampling period. Measurements were taken at several depths at one or more points along a transect of the river channel at each sample site. A mean daily value for each parameter was calculated from all measurements collected on a sample day. This mean represents the conditions at the sample location at the time of monitoring. Tables 2 through 5 present the means for each sampling day for water velocity, pH, DO, and temperature, respectively. Data are listed in these tables in the following order:

- Clearwater River reference location (CR REF)
- Snake River reference location (SR REF)
- Locations downsteam of the effluent from nearest to farthest:
    - LGP-13
    - LGP-09
    - LGP-06
    - LGP-01

These data are also presented in Figures 2 through 5.

4.1.1 Water Velocity

Table 2 and Figure 2 show mean water velocity measurements collected during the Weekly Receiving Water Monitoring Study. Mean water velocity at the Clearwater River reference location was typically greater and more variable than velocity measured at all locations in the Snake River. Over the entire monitoring period, velocity in the Clearwater River decreased from a maximum of 1.8 ft/s to a minimum of 0.4 ft/s. Velocity in the Snake River remained fairly uniform throughout the monitoring period and generally remained within 0.4 ft/s and 0.01 ft/s.

4.1.2 pH

Table 3 and Figure 3 show mean pH measurements collected during the Weekly Receiving Water Monitoring Study. Mean pH was very stable throughout the monitoring period at all locations, ranging from 7.31 to 8.72. During most sampling dates, pH was lowest in the Clearwater River. The maximum pH values observed in the Snake River occurred in different locations from week to week. All pH measurements were in the range of the Idaho Department of Environmental Quality (IDEQ) water quality standard range for pH of 6.5 to 9.5. All but three of the pH measurements were in the range of the Washington Department of Ecology (WDOE)

water quality standard range for pH of 6.5 to 8.5. The three pH measurements that were outside the WDOE standard range were collected on July 13, 2005, from the Snake River reference location (pH = 8.56) and at the two locations farthest downstream from the Facility (pH = 8.72 at LGP-06 and pH = 8.68 at LGP-01). These very minor deviations from the water quality standard range at such a distance downstream from the Facility are highly unlikely to be attributable to the Facility's discharge.

4.1.3 Dissolved Oxygen

Table 4 and Figure 4 show mean DO measurements collected during the Weekly Receiving Water Monitoring Study. Mean DO generally increased at all locations over the monitoring period. The highest DO concentrations were typically observed at the Clearwater River reference location (CR-REF), while the lowest DO concentrations were observed at the Snake River reference locations (SR-REF) for all dates before October, when the lowest DO concentrations were observed at LGP-01. Concentrations of DO at the other sample locations were similar throughout the monitoring period. With the exception of the Snake River reference location during the period from July 13, 2005 through August 10, 2005 (when DO ranged from 6.25 to 7.68 mg/L), DO at all locations and dates exceeded the WDOE water quality standard for DO, which is a minimum of 8 mg/L DO. EPA used this water quality standard as the toxicity benchmark for DO in its Biological Evaluation and as the basis for the computation of the effluent limitations for Biochemical Oxygen Demand (BOD) in the permit. The finding that all downstream DO measurements were at least 8 mg/L, and were therefore compliant with the WDOE water quality standard, indicates that the Facility discharge is not affecting DO downstream of the Facility.

4.1.4 Water Temperature

Mean water temperatures generally decreased at all locations over the monitoring period. The highest temperatures were always observed at SR-REF except for 8/3/05, where the highest temperature was at LGP-01. The lowest temperatures were always observed at CR-REF. At the other Snake River locations, water temperatures tended to increase moving from upstream to downstream, such that the lowest Snake River temperatures were measured closest to the Facility, and the highest temperatures were measured farthest from the Facility (approaching the Lower Granite Dam). During July, only the Snake River reference location temperatures exceeded the temperature benchmark for July and August of 20 degrees C used in EPA's Biological Evaluation.

During August, the temperature benchmark of 20 degrees C was exceeded only at the Snake River reference location and on one day at location LGP-01 (the farthest downstream location), when a temperature of 20.3 degrees C was recorded.

EPA's Biological Evaluation used a temperature benchmark of 18 degrees C for September and October. During September, the temperature at the Snake River reference location exceeded the benchmark on all sampling dates. The temperature measured at the three farthest downstream Snake River sampling locations (LGP-09, LGP-06, and LGP-01) exceeded the benchmark of 18 degrees C on the first one or two sampling dates in the monitoring period, and

were below the benchmark from September 19, 2005 through the end of October. The temperature measured at LGP-13 (closest to the Facility) did not exceed the benchmark of 18 degrees C on any sampling date.

4.2 Conventional Parameters

Conventional parameters analyzed during this study were total suspended solids (TSS) and biochemical oxygen demand (BOD). For those samples with nondetectable concentrations, the concentration was calculated by using one half the detection limit. If an analyte was not detectable across all sites on a given sample day, it was considered not present.

4.2.1 Total Suspended Solids

Table 6 presents the Total suspended solids (TSS) concentrations for each sampling day of the monitoring period. TSS concentrations were ND in all but 17 out of 221 samples. The detection limit for TSS was 5 mg/L. Detected concentrations ranged from 5 mg/L to 12 mg/L with the maximum concentration occurring at SR-REF-MD, on 7/7/05. Among the upstream samples, TSS concentrations ranged from ND to 12 mg/L. Among downstream samples, TSS concentrations ranged from ND to 11 mg/L.

EPA's Biological Evaluation used a toxicity benchmark of 10 mg/L for TSS. Two of the 221 measurements collected during the study exceeded 10 mg/L. One exceedance of 12 mg/L occurred on July 7, 2005 at the Snake River reference location, and the other exceedance 11 mg/L occurred at LGP-01 (the farthest downstream sampling location). Average concentrations by date or by location were well below the toxicity benchmark.

4.2.2 Biochemical Oxygen Demand

Table 7 and Figures 6a (shallow surface water) and 6b (mid-depth surface water) present the BOD concentrations for each sampling day of the monitoring period. Biochemical oxygen demand (BOD) concentrations ranged from ND to 7 mg/L. The maximum concentration was measured in a sample collected at station LGP-01-S on 9/7/05 and 9/21/05. Among the upstream samples, BOD concentrations ranged from ND to 1.7 mg/L. Among the downstream samples, BOD concentrations ranged from ND to 7 mg/L. With the exception of the three measurements collected from shallow surface water at LGP-01 (the farthest downstream sampling location) during September, all BOD concentrations were below 2 mg/L at all locations. Concentrations typically hovered around 1 mg/L in July and August, and decreased to non-detect by mid-October.

4.3 Nutrients

During weekly monitoring, samples were analyzed for several nitrogen- and phosphorus-containing nutrients. The nitrogen-containing nutrients were ammonia nitrogen, nitrate and nitrite nitrogen, and total Kjeldahl nitrogen. The phosphorus-containing nutrients were total phosphorus and orthophosphate. For those samples with nondetectable concentrations, the concentration was calculated by using one half the detection limit. If an analyte was not

detectable across all sites on a given sample day, it was considered not present and thus not considered present.

4.3.1 Ammonia Nitrogen

Table 8 and Figures 7a (shallow surface water) and 7b (mid-depth surface water) present ammonia nitrogen concentrations for each sampling day of the monitoring period. Ammonia nitrogen concentrations during the monitoring period ranged from nondetect to 0.11 mg/L. The maximum concentration was measured in a sample collected at station LGP-13-S on 7/27/05. Among the upstream samples, ammonia nitrogen concentrations ranged from ND to 0.03 mg/L. Among the downstream samples, ammonia nitrogen concentrations ranged from ND to 0.11 mg/L. In both shallow and mid-depth samples, concentrations were typically below 0.04 mg/L. During each week, the location of the maximum concentration varied among mid-depth samples. In shallow samples, the maximum concentrations were often detected at LGP-01 (the farthest downstream sample location).

4.3.2 Nitrate/Nitrite Nitrogen

Table 9 and Figures 8a (shallow surface water) and 8b (mid-depth surface water) present nitrate/nitrite nitrogen concentrations for each sampling day of the monitoring period. Concentrations of nitrate/nitrite nitrogen ranged from nondetect to 0.62 mg/L. The maximum concentration was measured in a sample collected in the Snake River reference location on 10/11/05. The minimum concentration, and the only nondetectable concentration, was measured in a sample collected in the Clearwater River reference location, also on 10/11/05. Among the upstream samples, nitrate/nitrite nitrogen concentrations ranged from ND to 0.62 mg/L. Among the downstream samples, nitrate/nitrite nitrogen concentrations ranged from 0.042 mg/L to 0.57 mg/L. Maximum concentrations in both shallow and mid-depth samples were generally observed in the Snake River reference location. Concentrations tended to increase over the duration of the study at both depths, with the exception of the Clearwater River reference location, where concentrations remained constant over the duration of the study. The concentration profile observed in the Snake River samples suggests the existence of a non-point source contribution of nitrate/nitrite nitrogen along the length of the River.

4.3.3 Total Kjeldahl Nitrogen

Table 10 and Figures 9a (shallow surface water) and 9b (mid-depth surface water) present the total Kjeldahl nitrogen (TKN) concentrations for each sampling day of the monitoring period. TKN concentrations ranged from nondetect to 1.5 mg/L. Nondetectable concentrations were observed at several site locations as well as the Clearwater River reference location. The maximum concentration was measured in a sample collected at station LGP-01-S on 9/21/05. Among the upstream samples, TKN concentrations ranged from ND to 0.7 mg/L. Among the downstream samples, TKN concentrations ranged from ND to 1.5 mg/L. Concentrations of TKN were fairly constant during the duration of the study with perhaps a small increase over time. Concentrations at location LGP-01 (the farthest downstream sample location) are slightly higher than concentrations at locations closer to the Facility.

4.3.4 Total Phosphorus

Table 11 and Figures 10a (shallow surface water) and 10b (mid-depth surface water) present the total phosphorus concentrations for each sampling day of the monitoring period. Total phosphorus concentrations ranged from ND to 0.13 mg/L. Nondetect concentrations were observed three times, all at the Clearwater River reference location. The maximum concentration was measured in a sample collected at station LGP-01-S on 9/21/05. Among upstream samples, total phosphorus ranged from ND to 0.12 mg/L. Among downstream samples, total phosphorus ranged from 0.02 mg/L to 0.13 mg/L. Maximum concentrations in shallow samples were observed in different locations from week to week. In mid-depth samples, maximum concentrations were often observed at the Snake River reference location. Concentrations remained constant at the Clearwater River reference location. At both depths, concentrations in the Snake River tended to increase over the duration of the study through September, then decreased in October. The concentration profile observed in the Snake River samples suggests the existence of a non-point source contribution of phosphorus along the length of the River.

4.3.5 Orthophosphate Phosphorus

Table 12 and Figures 11a (shallow surface water) and 11b (mid-depth surface water) present the orthophosphate phosphorus concentrations for each sampling day of the monitoring period. Orthophosphate phosphorus concentrations ranged from ND to 0.10 mg/L. Nondetectable concentrations were observed three times, all at the Clearwater River reference location. The maximum concentration was measured in a sample collected at station LGP-09-S and LGP-06-S on 10/5/05. Among upstream samples, orthophosphate concentrations ranged from ND to 0.09 mg/L. Among downstream samples, orthophosphate concentrations ranged from 0.009 mg/L to 0.1 mg/L. Maximum concentrations in shallow samples were observed in different locations from week to week. In mid-depth samples, maximum concentrations were often observed at the Snake River reference location. Concentrations remained constant at the Clearwater River reference location. At both depths, concentrations in the Snake River tended to increase over the duration of the study through September, then decreased in October. The concentration profile observed in the Snake River samples suggests the existence of a non-point source contribution of orthophosphate phosphorus along the length of the River.

4.3.6 2,3,7,8-TCDD

Table 13 presents the 2,3,7,8-TCDD concentrations for each sampling day of the monitoring period. 2,3,7,8-TCDD was not detected in any sample on any date during the study.

4.3.7 2,3,7,8-TCDF

Table 14 presents the 2,3,7,8-TCDF concentrations for each sampling day of the monitoring period. 2,3,7,8-TCDF was not detected in any sample on any date during the study.

4.4 Quarterly Surface Water and Effluent Monitoring Study

Parameters with nondetectable concentrations were represented by one half the detection limit. If an analyte was not detectable across all sites, it was considered not present and thus not considered in further calculations.

4.4.1 Resin Acids

Table 15 and Figures 12a (river samples) and 12b (effluent samples) present the resin acid concentrations for each river location and effluent. Most resin acids were not detected in the Snake River and Clearwater River: Dehydroabietic, Neoabietic, Palustric, Pimaric, Sandaracopimaric, and Total 12/14-Chlorodehydroabietic acid. Abietic acid was detected at all locations and ranged from 0.009 ug/L at the Snake River reference location to 0.035 ug/L at LGP-09-SW-A, with a mean concentration of 0.024 ug/L and a median concentration of 0.021 ug/L. Isopimaric acid ranged from ND at LGP-13-SW-A and LGP-14-SW-A to 0.006 ug/L at LGP-09-SW-A. All resin acid concentrations are below the toxicity benchmark of 2.2 ug/L used in EPA's Monitoring Plan, attached to NOAA Fisheries' Biological Opinion. Figure 12a shows that resin acids show no trend in concentration with distance from the diffuser. The resin acid with the most variation in concentrations was abietic acid. Even among the results for this compound, concentrations hovered around 0.02 ug/L, with some concentrations slightly above and some concentrations slightly below 0.02 ug/L.

Table 15 also presents the concentrations in the effluent as both dissolved and total. Dehydroabietic acid and Palustric acid were not detected in dissolved effluent. In the total effluent, Palustric acid was not detected. Figure 12b shows a substantial difference between the concentrations in the total and dissolved samples, indicating that the majority of resin acids are associated with the solid fraction of effluent, rather than the dissolved fraction.

4.4.2 Phytosterols

Table 16 and Figures 13a (river samples) and 13b (effluent samples) present the phytosterol concentrations for each river location and effluent. Retene was not detected in river or effluent samples. Stigmastanol was not detected in river samples. B-sitosterol concentrations ranged from 0.46 ug/L at the Clearwater River reference location to 3.39 ug/L at LGP-01-SW-A, with a mean concentration of 1.12 ug/L and a median concentration of 0.679 ug/L. Campesterol concentrations ranged from 0.038 ug/L at the Clearwater River reference location to 0.27 ug/L at LGP-01-SW-A, with a mean concentration of 0.076 ug/L and a median concentration of 0.054 ug/L. Stigmasterol concentrations ranged from ND at the Clearwater Reference location to 0.331 ug/L at LGP-01-SW-A, with a mean concentration of 0.095 ug/L and a median concentration of 0.067 ug/L. All phytosterol concentrations, except the maximum concentration of B-sitosterol in LGP-01 (the farthest location from the Facility) (3.39 ug/L), were lower than the toxicity benchmark of 2.5 ug/L used in EPA's Monitoring Plan, attached to NOAA Fisheries' Biological Opinion.

Figure 13a shows that, with the exception of the concentration of B-sitosterol in LGP-01, concentrations were fairly constant in all samples. B-sitosterol had slightly elevated

concentrations in the two samples closest to the diffuser (LGP-013 and LGP-14), then decreased downstream. This concentration profile may represent a limited area of slightly elevated concentrations associated with the Facility. However, given that the maximum concentration of this compound in LGP-01, it is certainly possible that a source of B-sitosterol exists in area between the Facility and sampling location LGP-01.

Figure 13b shows a substantial difference between the concentrations in the total and dissolved samples, indicating that the majority of phytosterols are associated with the solid fraction of effluent, rather than the dissolved fraction.

4.4.3 Chlorophenolics

Table 17 presents the chlorophenolics concentrations for each location. Chlorophenolics were not detected in any river water samples, nor were they detected in the effluent samples.

4.4.4 Chloroform

Table 18 and Figure 16 present the chloroform concentrations for each location. Chloroform was not detected with the exception of LGP-01 and the Effluent. At LGP-01, the chloroform concentration was 0.19 ug/L. In the effluent, the chloroform concentration was 1.08 ug/L. The detection limit for chloroform was 0.14 ug/L. Both detected concentrations of chloroform are less than the toxicity benchmark for chloroform of 12.4 ug/L used in EPA's Biological Evaluation.

4.4.5 Dissolved and Total Organic Carbon

Table 19 and Figure 17 present the Dissolved Organic Carbon (DOC) and Total Organic Carbon (TOC) concentrations for each river sampling location. Table 19 also presents DOC and TOC in effluent samples. Concentrations of DOC and TOC were generally constant in river water samples. DOC at LGP-11, 11.8 mg/L, was considerably greater than any other observed concentration of either DOC or TOC and could be the result of sampling or analytical error. At the other sampling locations, DOC concentrations ranged from 1.9 mg/L at CR REF to 3.1 mg/L at LGP-01. Concentrations of TOC ranged from 2.1 mg/L at CR-REF to 2.9 mg/L at LGP-14, LGP-09, LGP-06, and LGP-01.

In the effluent, DOC was 125 mg/L and TOC was 150 mg/L.

4.4.6 Dioxin Congeners

Table 20 and Figures 18a (river water samples) and 18b (effluent samples) presents the dioxin congener concentrations for each location and the effluent. 2,3,7,8-TCDD was not detected in any river sampling location except LGP-13-SW-A, where the concentration was 0.022 pg/L. The mean river water concentration was 0.0038 pg/L and the median was 0.0013 pg/L. The single detected concentration, as well as the mean and median concentrations, are below the toxicity benchmark of 0.06 pg/L used in EPA's Monitoring Plan as appended to NOAA Fisheries' Biological Opinion.

1,2,3,7,8-PeCDD was ND at all locations except LGP-06-SW-A and LGP-13-SW-A. The maximum concentration of 1,2,3,7,8-PeCDD was 0.051 pg/L (at LGP-13-SW-A), the mean concentration was 0.0076 pg/L, and the median concentration was 0.0013 pg/L. The concentration of 1,2,3,4,7,8-HxCDD ranged from ND at two locations to 0.008 pg/L at LGP-13-SW-A. The mean concentration was 0.0032 pg/L and the median concentration was 0.003 pg/L. The concentration of 1,2,3,6,7,8-HxCDD ranged from ND at three locations to 0.04 pg/L at LGP-13-SW-A. The mean concentration was 0.013 pg/L and the median concentration was 0.0093 pg/L. The concentration of 1,2,3,7,8,9-HxCDD ranged from 0.004 pg/L at the Clearwater River reference location to 0.038 pg/L at LGP-13-SW-A. The mean concentration was 0.012 pg/L and the median concentration was 0.0083. The concentration of 1,2,3,4,6,7,8-HpCDD ranged from 0.056 pg/L at the Clearwater River reference location to 0.266 pg/L at LGP-01-SW-A. The mean concentration was 0.167 pg/L and the median concentration was 0.17 pg/L. OCDD concentrations ranged from 0.307 pg/L at the Clearwater River reference location to 1.66 pg/L at LGP-01-SW-A. The mean concentration was 0.85 pg/L and the median concentration was 0.83 pg/L.

Figure 18a indicates that concentrations of tetra- and penta-chlorinated dioxin congeners at location LGP-13 (near the Facility) were slightly higher than upstream or downstream concentrations. Subsequent rounds of quarterly sampling will be helpful in evaluating whether phenomenon represents a trend or a random event. In either case, however, concentrations at LGP-13 were lower than the toxicity benchmark for 2,3,7,8-TCDD.

2,3,7,8-TCDD was not detected in either the dissolved fraction of effluent or the solid fraction of effluent. Some higher-chlorinated dioxin congeners (that is, those congeners that are not associated with pulp and paper manufacturing processes) were detected in either the dissolved or solid fractions of effluent. As shown on Figure 18b, the majority of dioxin congeners detected in effluent were observed in the solid fraction.

4.4.7 Furans

Table 20 and Figures 19a (river water samples) and 19b (effluent samples) presents the furan congener concentrations for each location and the effluent. 2,3,7,8-TCDF ranged from ND at two locations to 0.006 pg/L at three locations. The mean concentration was 0.0044 pg/L and the median was 0.005 pg/L. The single detected concentration, as well as the mean and median concentrations, are below the toxicity benchmark of 0.2 pg/L used in EPA's Monitoring Plan as appended to NOAA Fisheries' Biological Opinion.

1,2,3,7,8-PeCDF ranged from ND at all locations except LGP-06-SW-A, where the concentration was 0.003 pg/L. 2,3,4,7,8-PeCDF concentrations ranged from ND at five locations to 0.003 pg/L at LGP-09-SW-A and LGP-14-SW-A. 1,2,3,4,7,8-HxCDF concentrations ranged from ND at four locations to 0.006 pg/L at LGP-14-SW-A. The mean concentration of 1,2,3,4,7,8-HxCDF was 0.0032 pg/L and the median was 0.00325 pg/L. 1,2,3,6,7,8-HxCDF concentrations ranged from ND at four locations to 0.004 pg/L at LGP-11-SW-A. The mean concentration was 0.0023 pg/L and the median was 0.0023 pg/L. 1,2,3,7,8,9-HxCDF was not detected at any location. 2,3,4,6,7,8-HxCDF was ND at all locations but LGP-06-SW-A, where the concentration was 0.0021 pg/L. 1,2,3,4,6,7,8-HpCDF was ND at all locations but LGP-13-SW-A, where the concentration was 0.03 pg/L. 1,2,3,4,7,8,9-HpCDF was ND at all locations but

LGP-11-SW-A, where the concentration was 0.003 pg/L. OCDF concentrations ranged from 0.007 pg/L at LGP-13-SW-A to 0.045 pg/L at LGP-01-SW-A. The mean concentration was 0.026 pg/L and the mean was 0.025 pg/L.

2,3,7,8-TCDF was detected in both the dissolved fraction of effluent and the solid fraction of effluent. The detected concentration of 2,3,7,8-TCDF in effluent is below the toxicity benchmark for this compound used in EPA's Monitoring Plan as appended to NOAA Fisheries Biological Opinion. Additionally, certain higher-chlorinated furan congeners (that is, those congeners that are not associated with pulp and paper manufacturing processes) were detected in either the dissolved or solid fractions of effluent. As shown on Figure 19b, the majority of furan congeners detected in effluent were observed in the solid fraction.

5.0 SUMMARY AND CONCLUSIONS

This report presents the results of sampling conducted during 2005 to complete the Quarterly Surface Water and Effluent Study and the Weekly Receiving Water Monitoring Study, both part of the Tier 1 Endangered Species Act Monitoring and NPDES Permit Compliance Monitoring required in non-discretionary terms and conditions set forth by the Services in their Biological Opinions on the re-issuance of Potlatch's NPDES permit by EPA. Additionally, the Behthic Community Study, also required as a Tier 1 study, was conducted. However, because the results of the study were not reported to Potlatch until January 9, 2005, the Benthic Community Study results will be presented in a subsequent Monitoring Study Report.

Receiving water and effluent data collected during the monitoring program has characterized the water quality at:

- Two reference locations (Snake River upstream of the effluent and the Clearwater River upstream of the confluence with the Snake River) during both weekly and quarterly monitoring programs;
- Four locations in the Snake River, downstream of the Potlatch effluent during weekly monitoring; and
- Six locations in the Snake River, downstream of the Potlatch effluent during quarterly monitoring.

The report presents all analytical results and discusses the temporal and spatial trends in measured parameters selected for this investigation.

The results of both the Weekly Receiving Water Monitoring Study and the Quarterly Surface Water and Effluent Study revealed no indications that the Facility's effluent has any influence on downstream parameter measurements. No meaningful differences between reference location conditions and downstream conditions were observed. With a few exceptions, all measurements complied with toxicity benchmarks and applicable water quality standards. The few exceptions occurred at reference locations or at the farthest downstream sampling location from the Facility.

In conclusion, the results of sampling and analysis upstream and downstream of the Facility support the finding in EPA's Biological Evaluation and the Services' Biological Opinions that the EPA's re-issuance of Potlatch's NPDES permit is not likely to jeopardize the continued existence of Snake River steelhead, Snake River spring/summer and fall chinook salmon, and Snake River sockeye salmon, nor result in the destruction or adverse modification of designated critical habitat for Snake River spring/summer and fall chinook salmon and Snake River sockeye salmon.

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AMEC Earth and Environmental, Inc. (AMEC) and Anchor Environmental (Anchor). 2005. Quality Assurance Project Plan for Endangered Species Act Monitoring and NPDES Permit Compliance Monitoring. Potlatch Corporation Lewiston Facility. May 2005.

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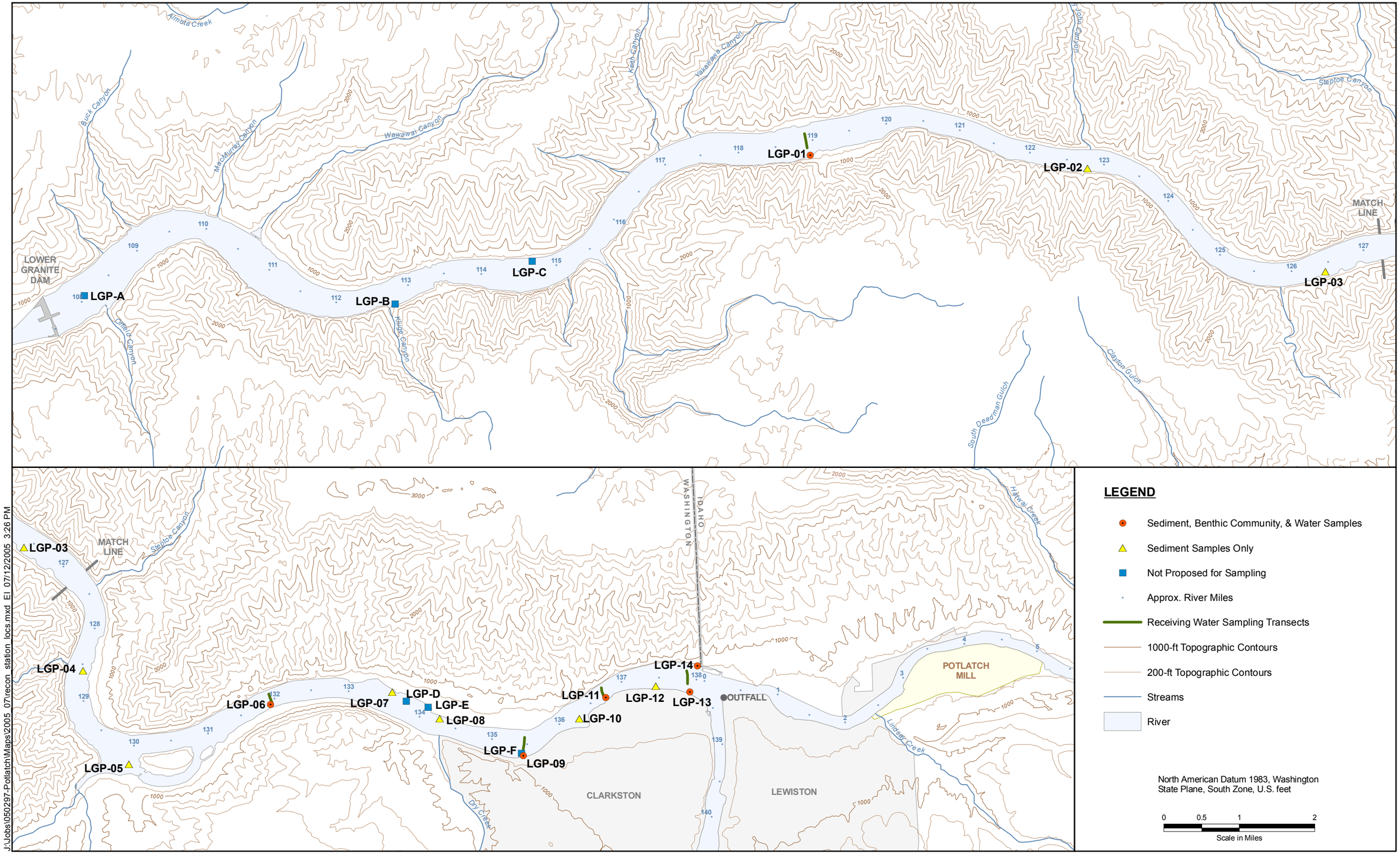

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ANCHOR ENVIRONMENTAL, L.L.C.

Figure 1.

Locations for Sediment, Benthic Community, and Receiving Water Samples
Potlatch Pulp & Paper Mill
Lewiston, Idaho

Figure 2. Mean Water Velocity

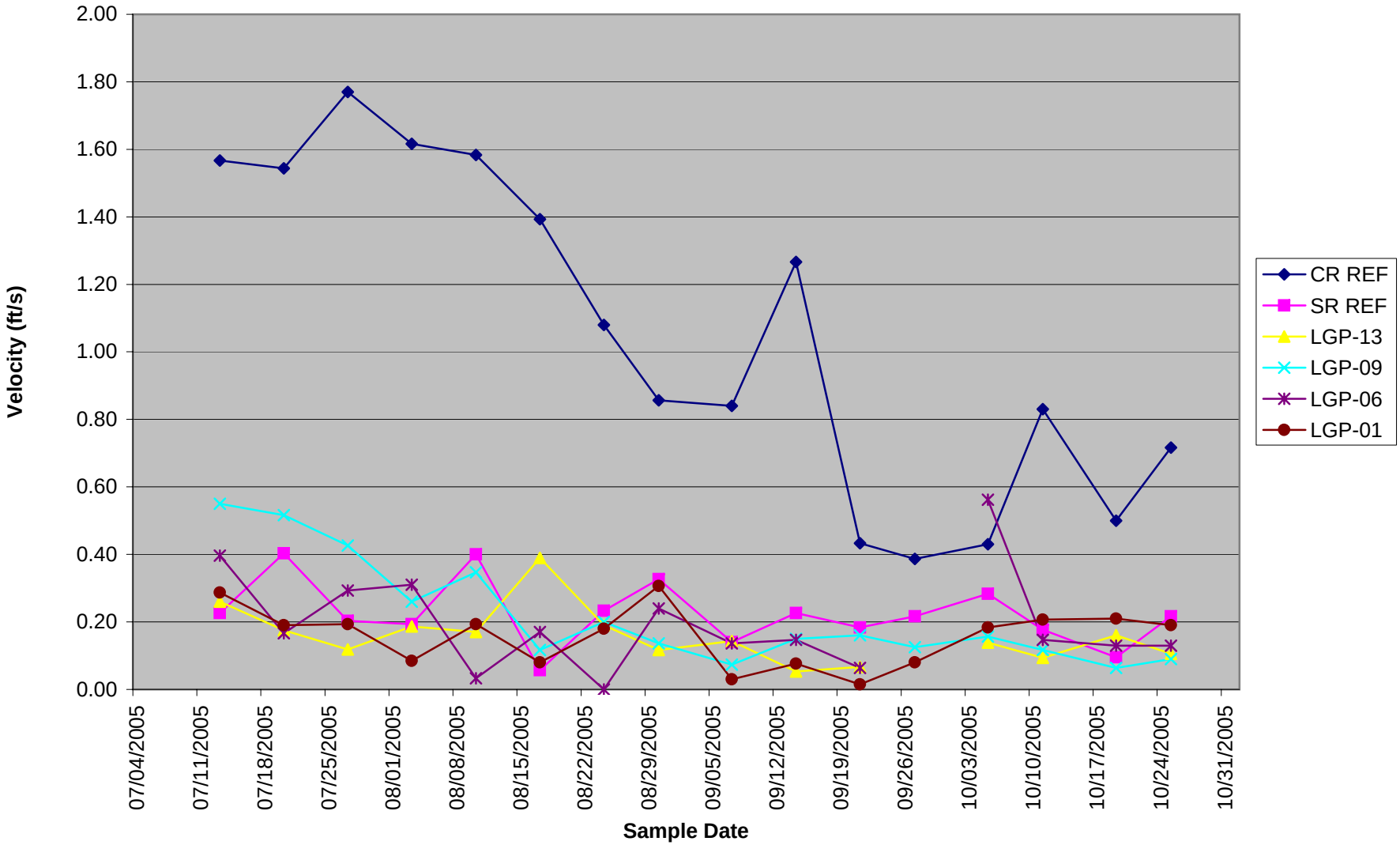


Figure 3. Mean Water pH

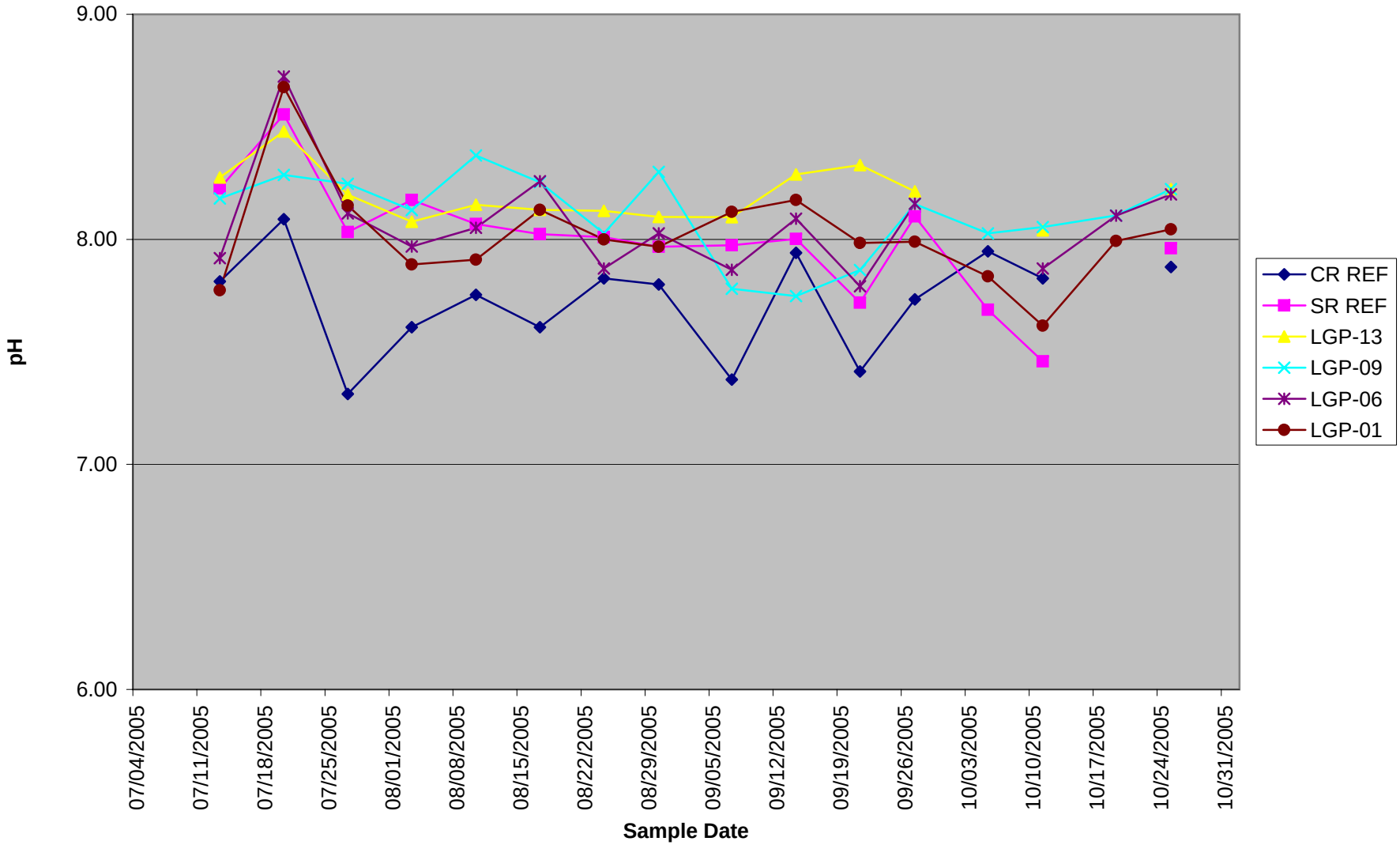


Figure 4. Mean Dissolved Oxygen

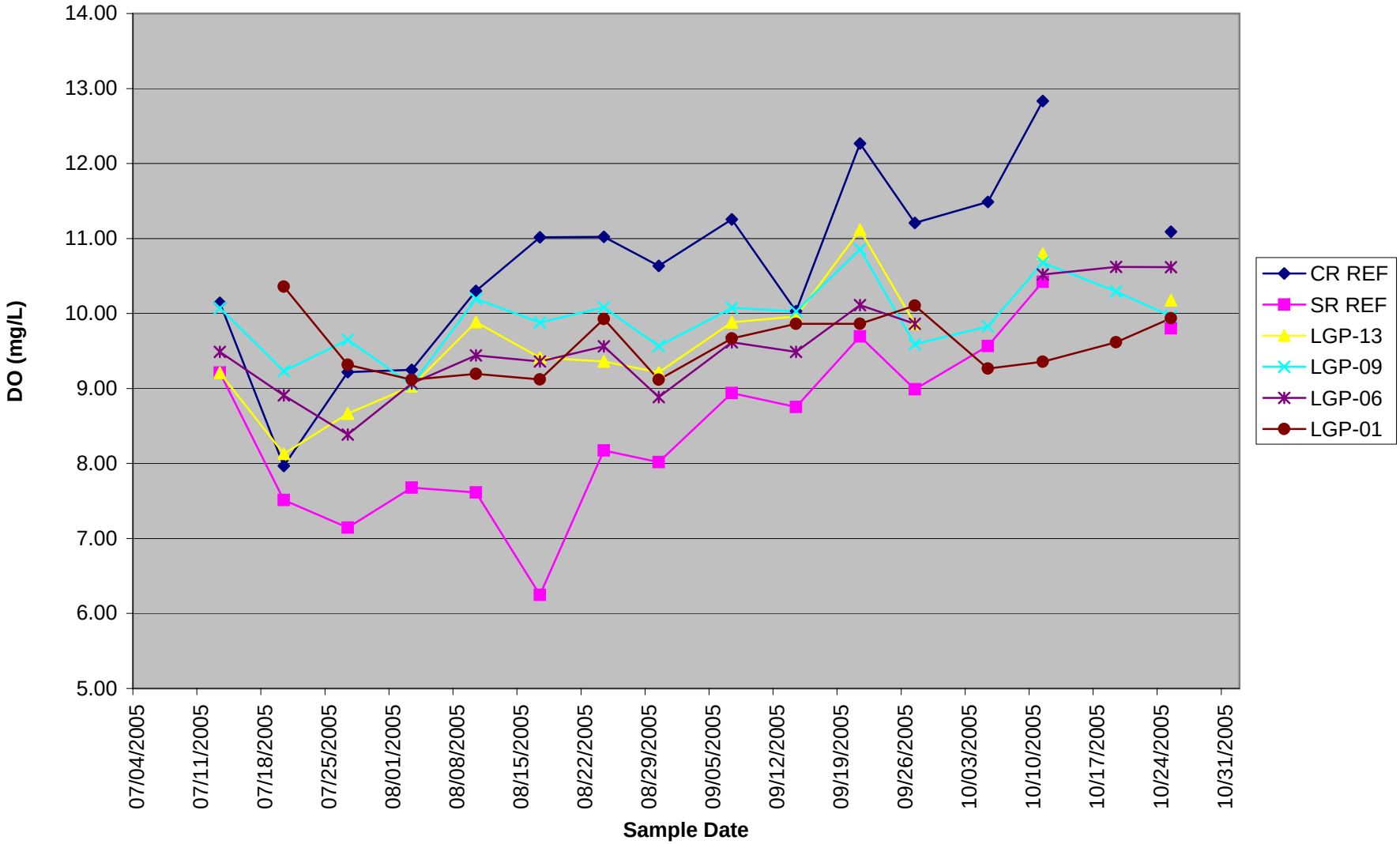


Figure 5. Mean Water Temperature

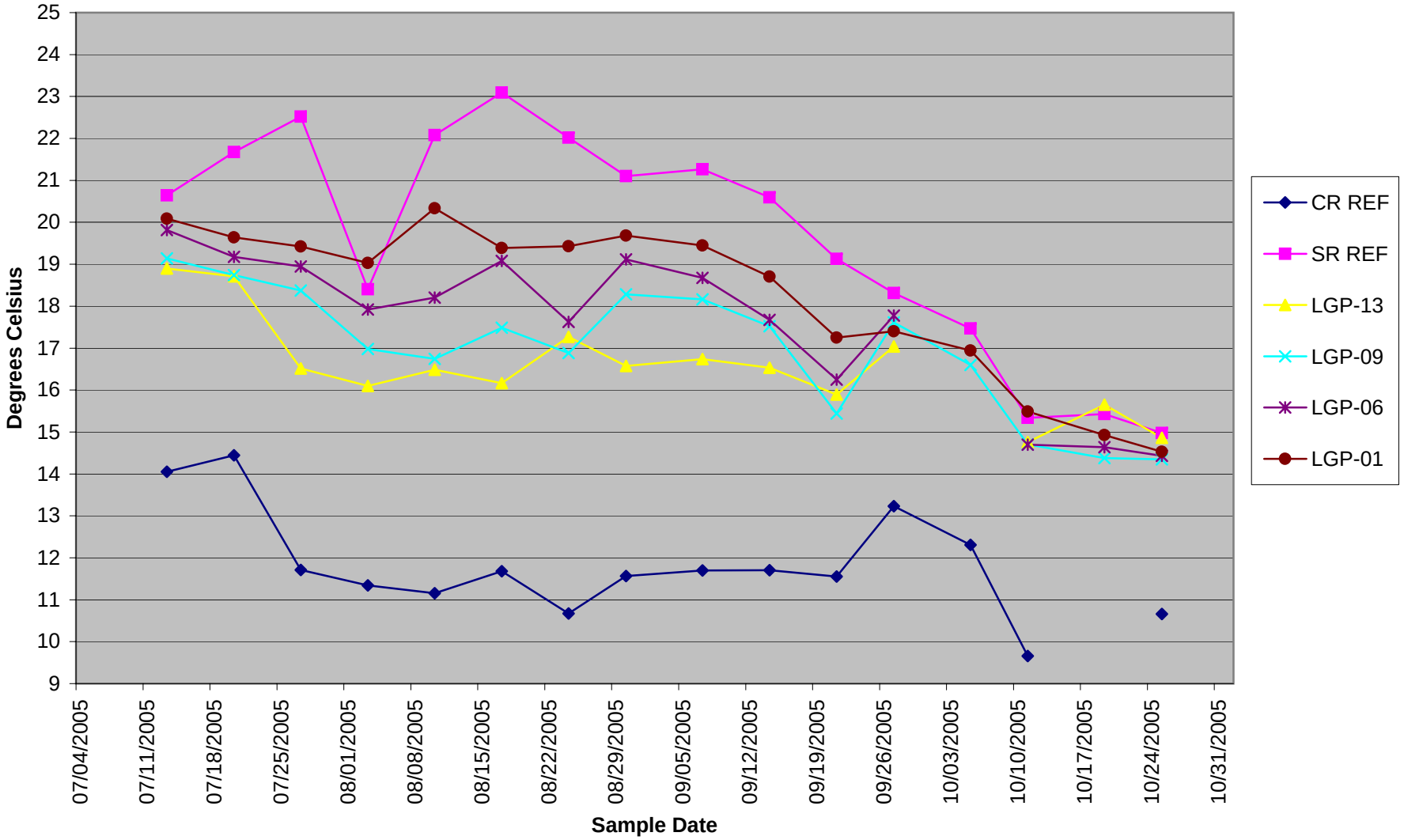


Figure 6a. Biological Oxygen Demand in Shallow Surface Water

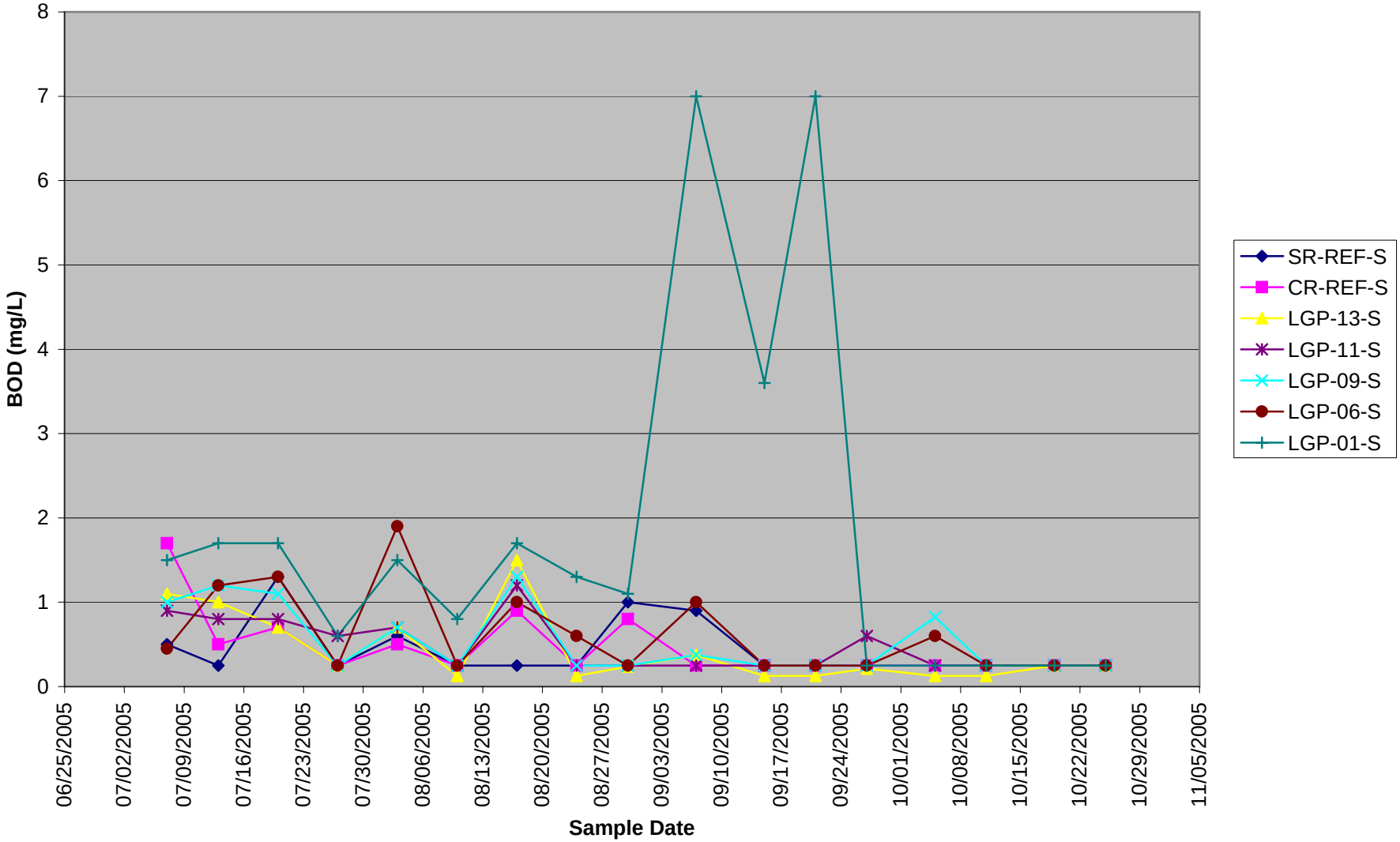


Figure 6b. Biological Oxygen Demand in Mid-Depth Surface Water

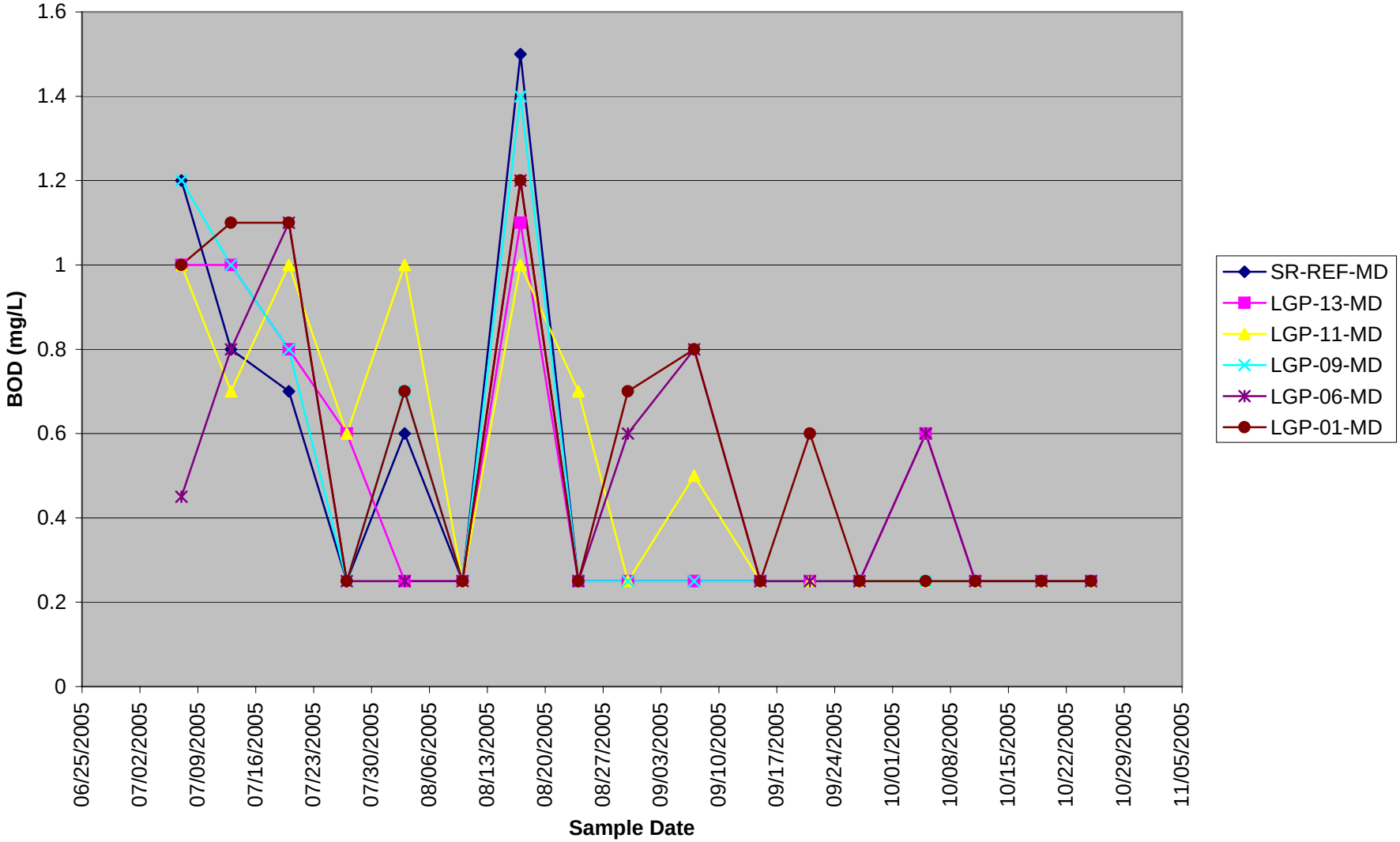


Figure 7a. Ammonia Nitrogen in Shallow Surface Water

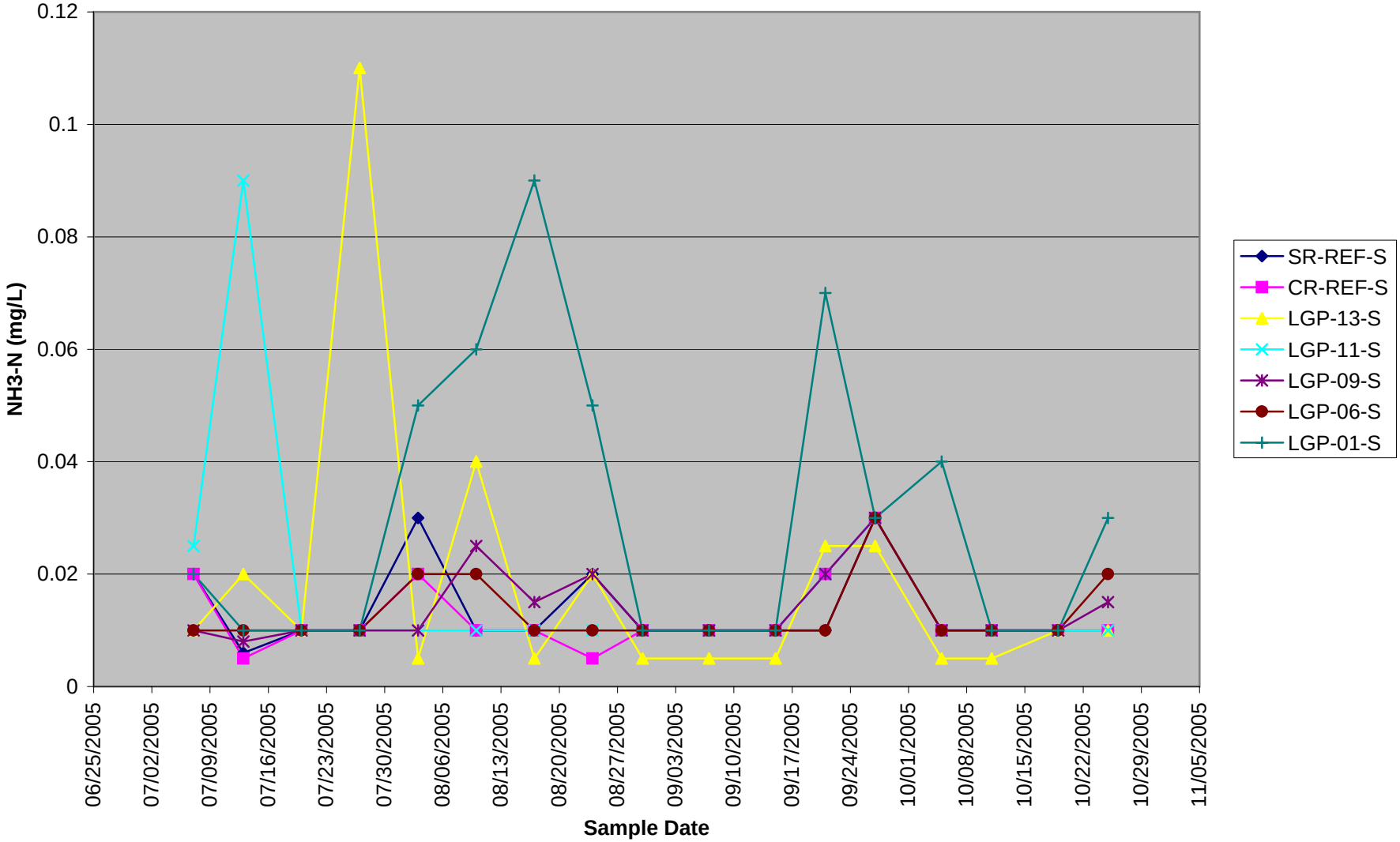


Figure 7b. Ammonia Nitrogen in Mid-Depth Surface Water

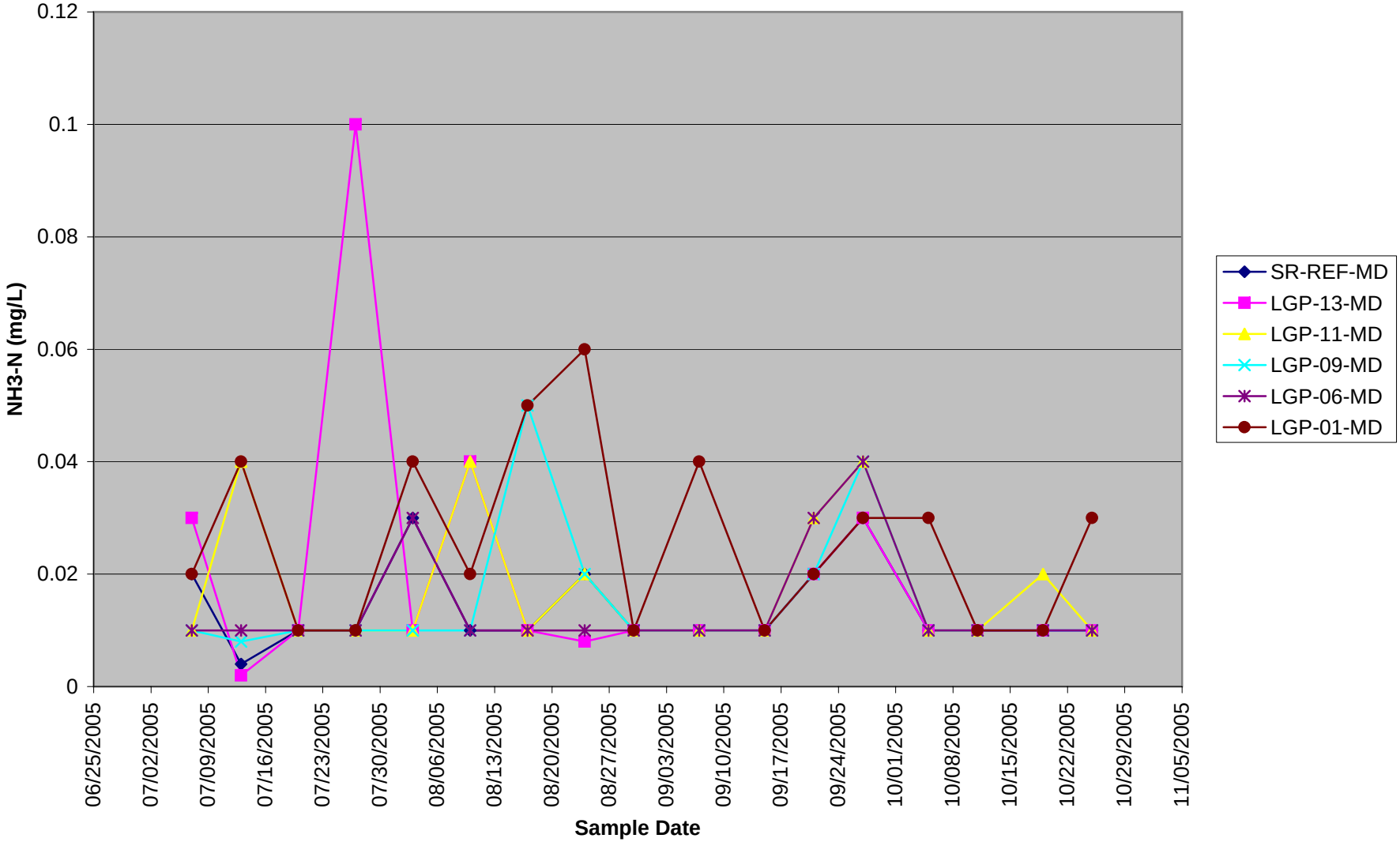


Figure 8a. Nitrate/Nitrite Nitrogen in Shallow Surface Water

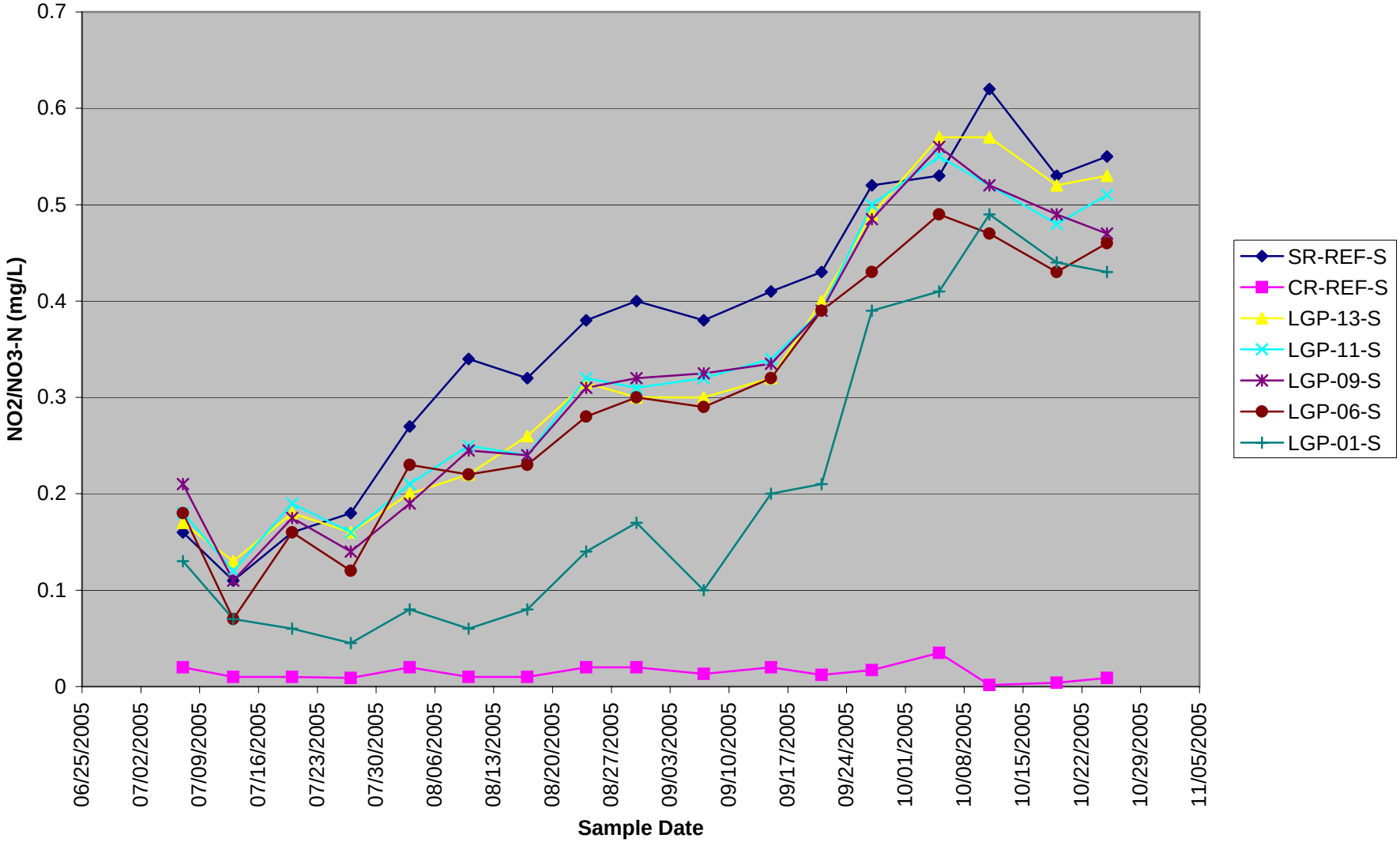


Figure 8b. Nitrate/Nitrite Nitrogen in Mid-Depth Surface Water

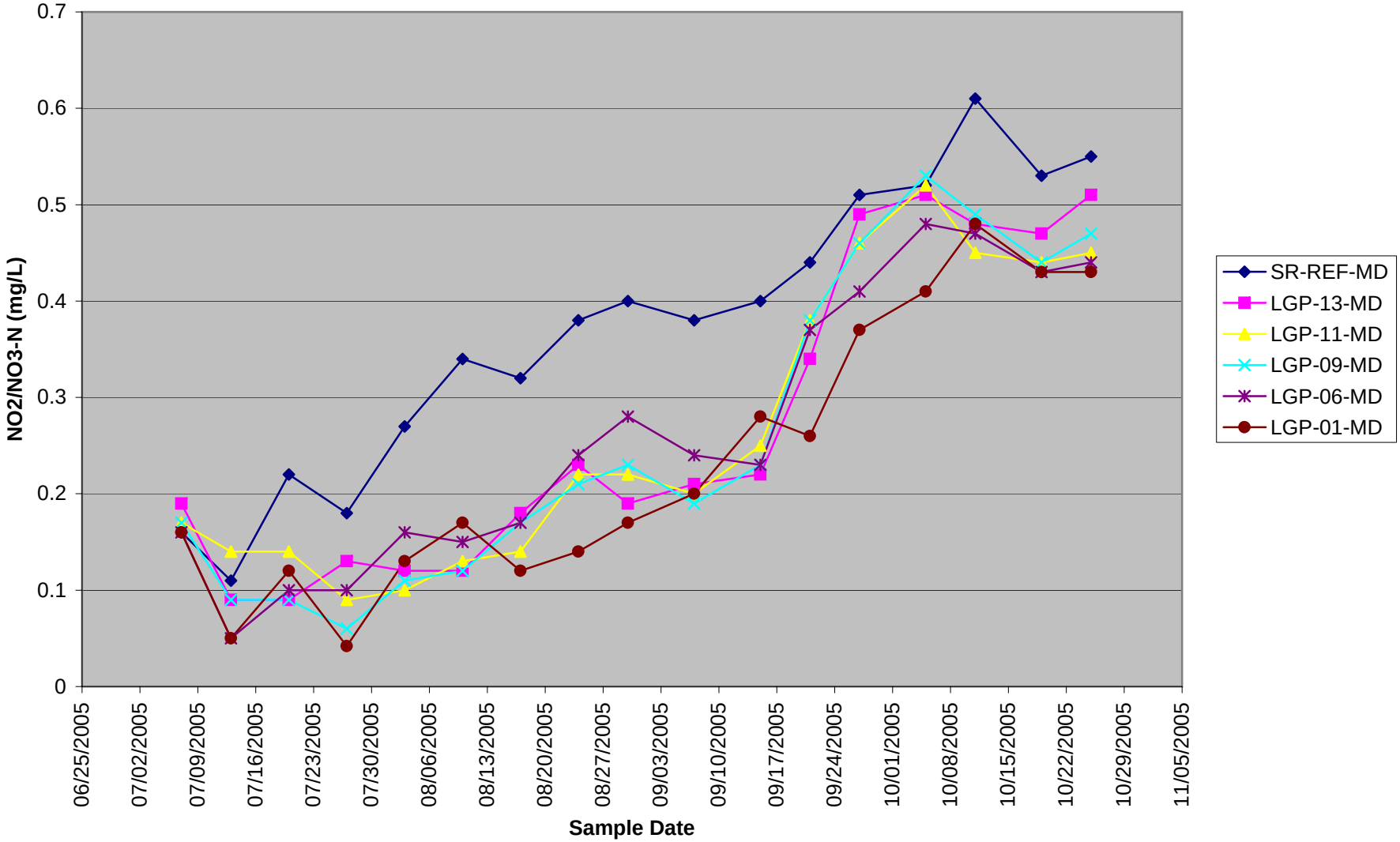


Figure 9a. Total Kjeldahl Nitrogen in Shallow Surface Water

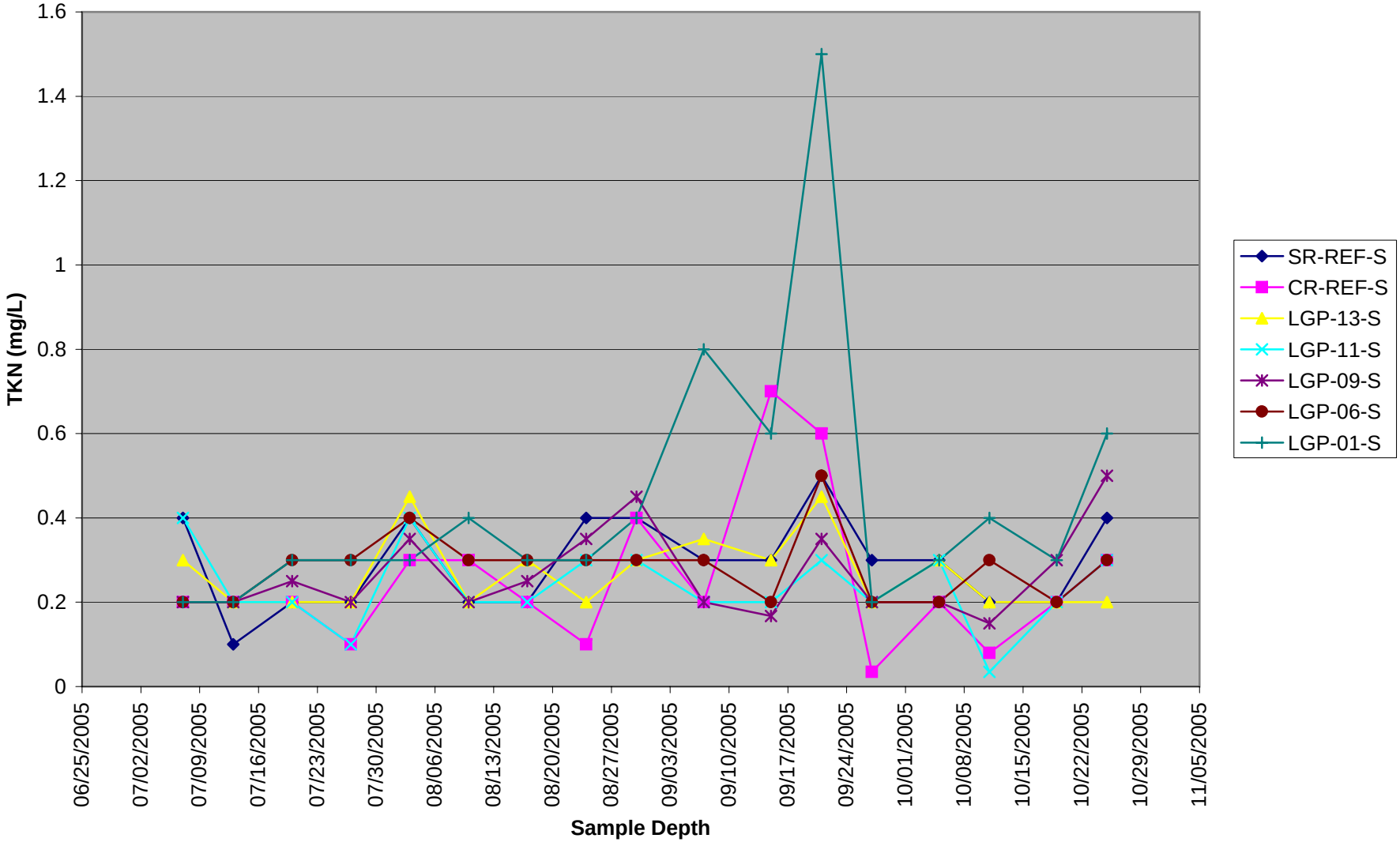


Figure 9b. Total Kjeldahl Nitrogen in Mid-Depth Surface-Water

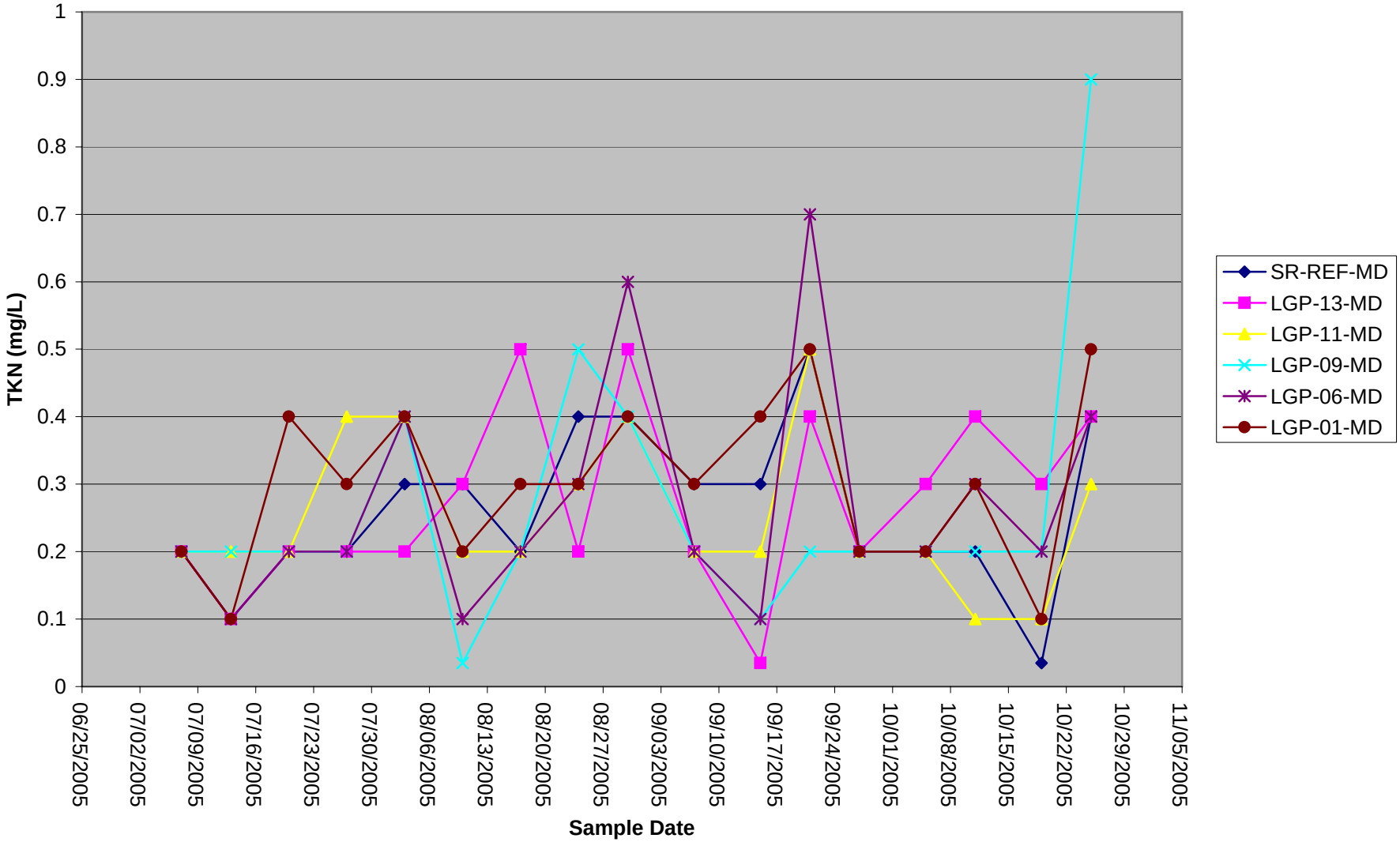
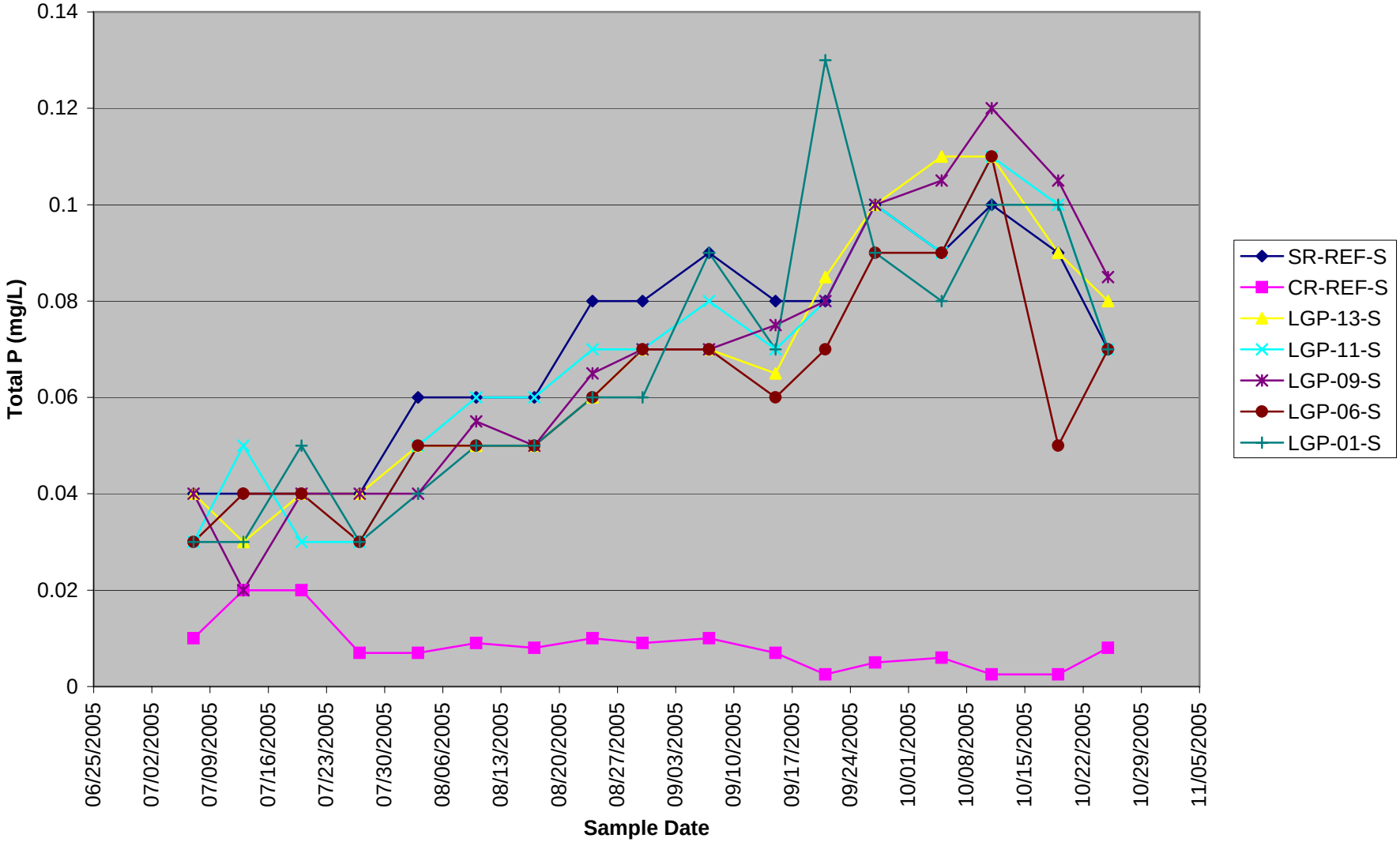


Figure 10a. Total Phosphorus in Shallow Surface Water



10b. Total Phosphorus in Mid-Depth Surface Water

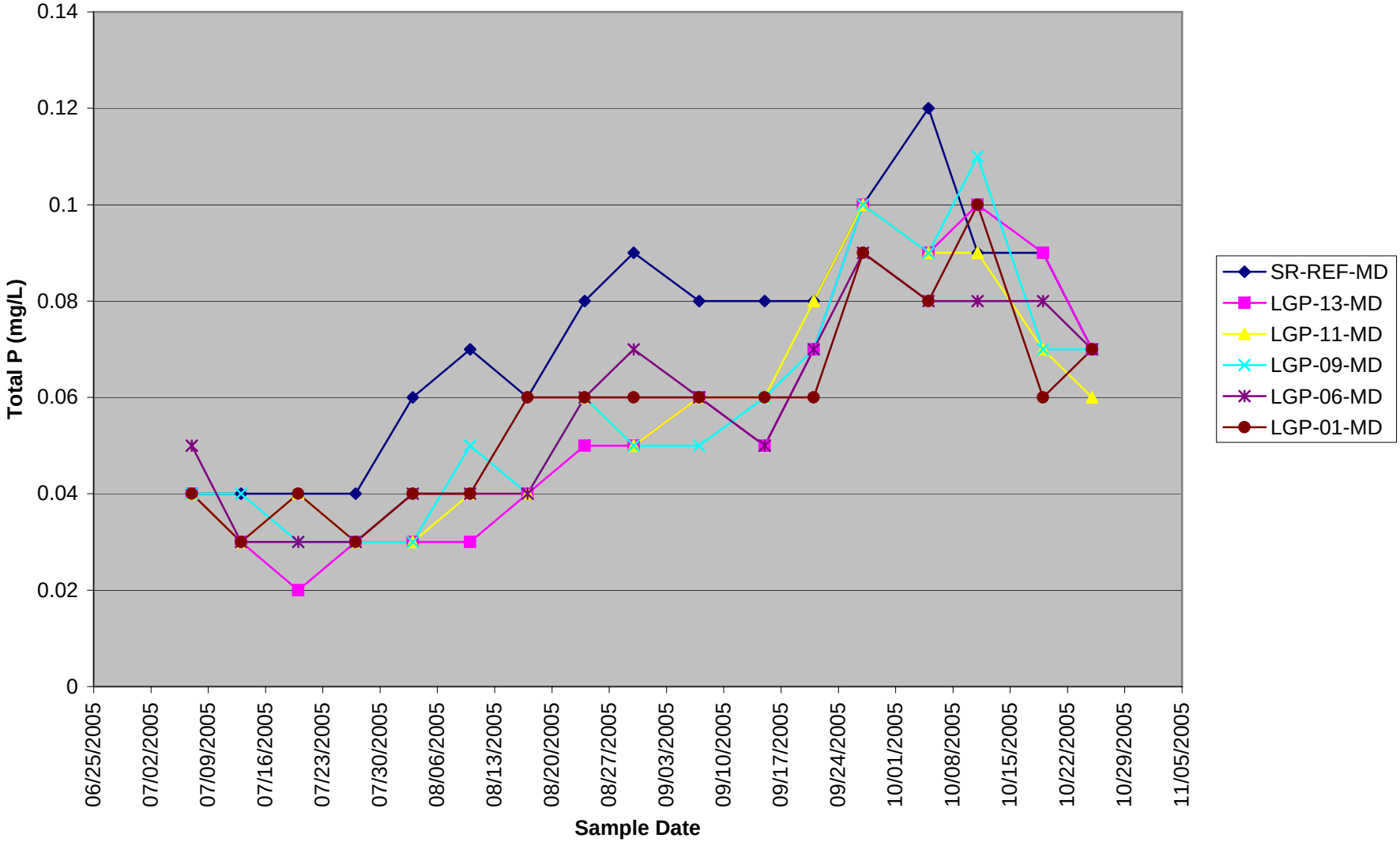


Figure 11a. Orthophosphate Phosphorus in Shallow Surface Water

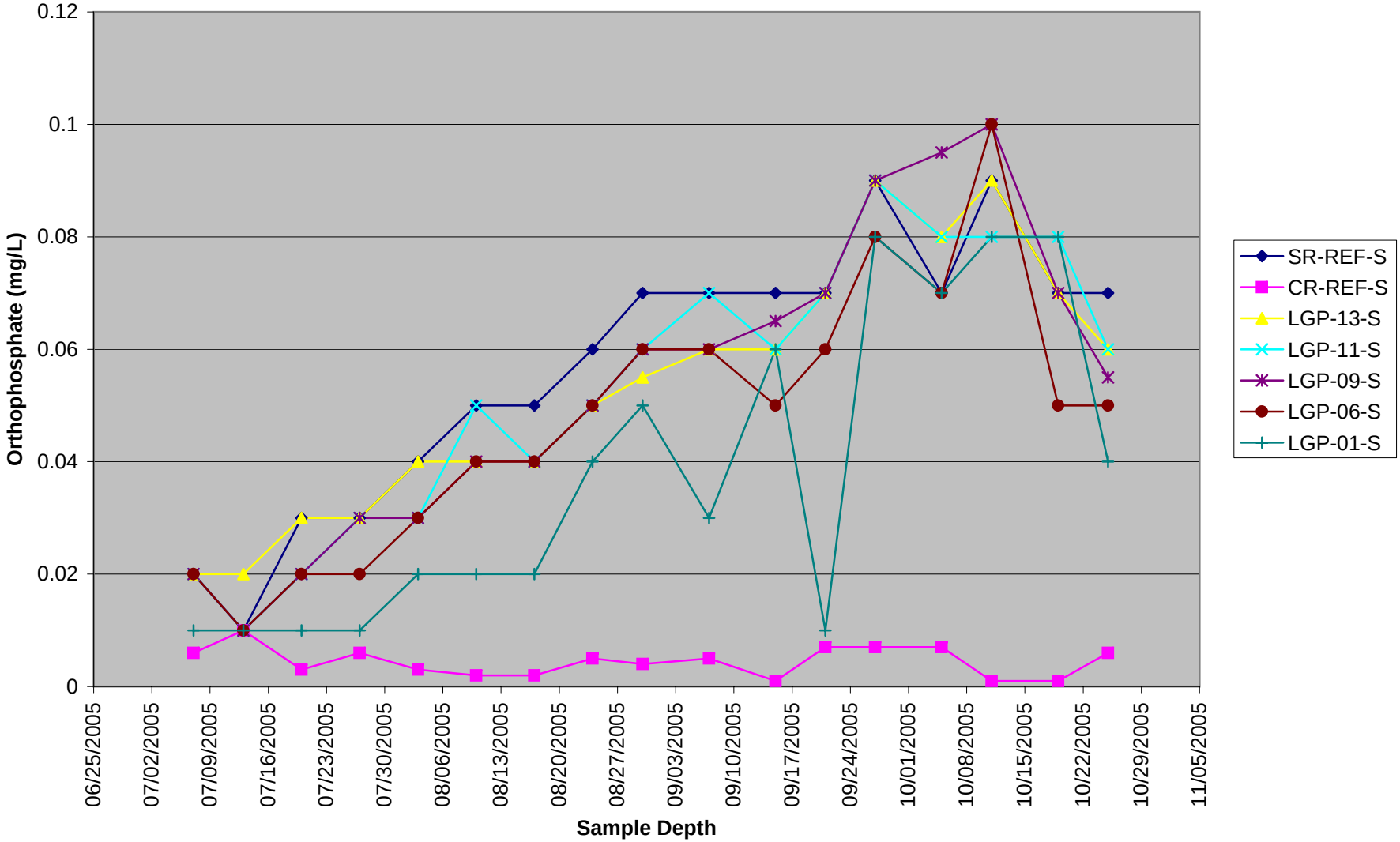


Figure 11b. Orthophosphate Phosphorus in Mid-Depth Surface Water

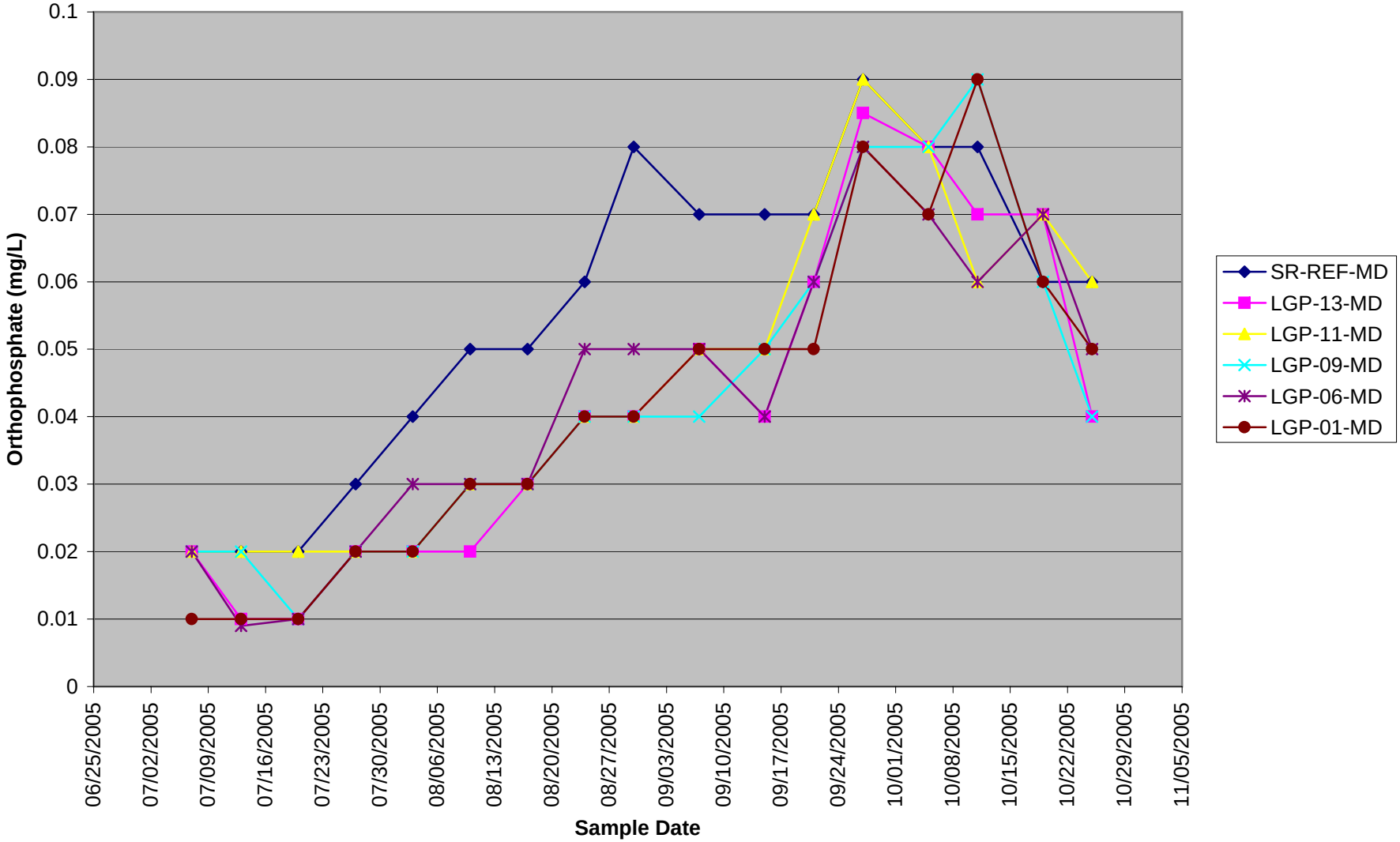


Figure 12a. Resin Acids in Receiving Water

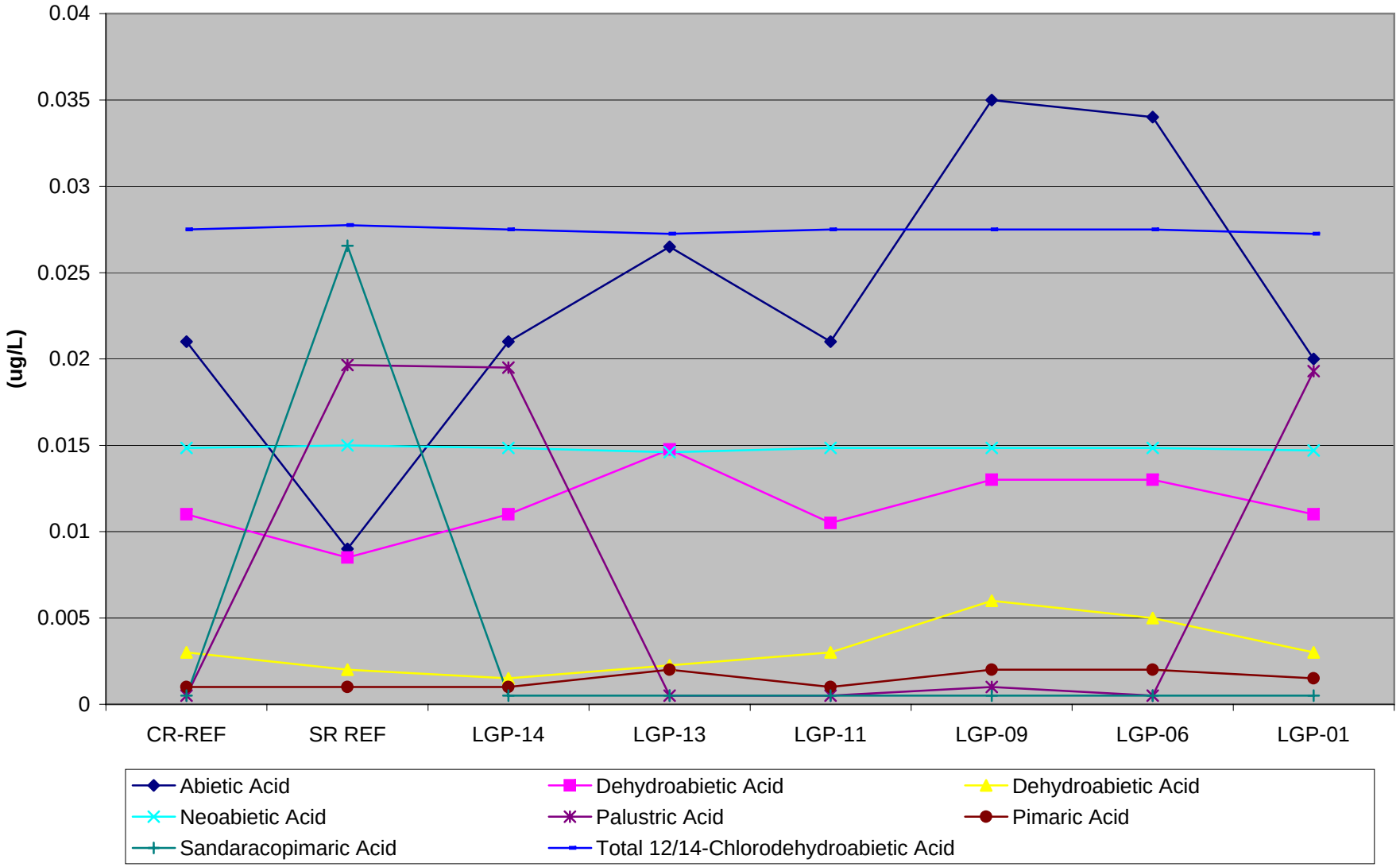


Figure 12b. Resin Acids in Effluent

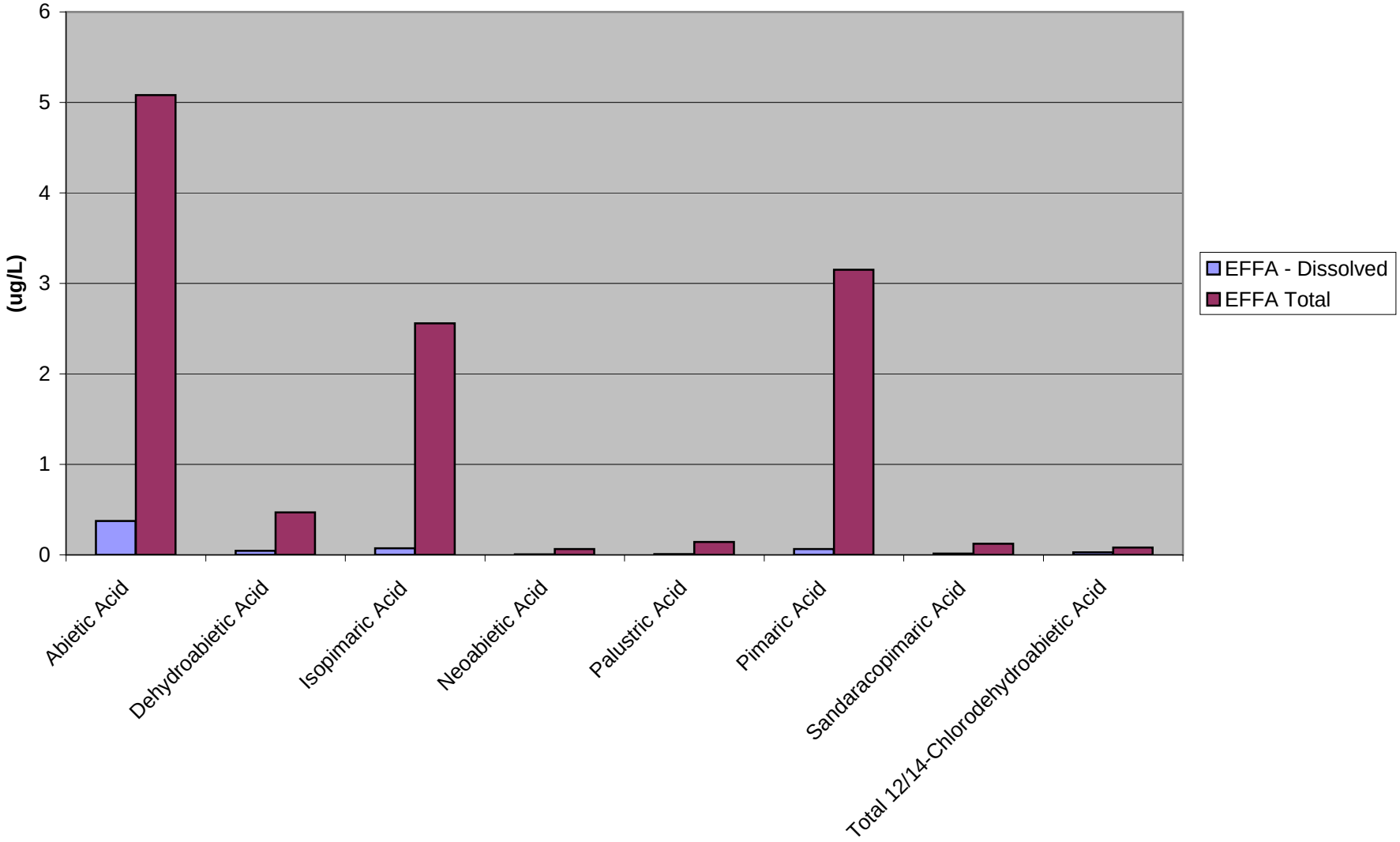


Figure 13a. Phytosterols in Receiving Water

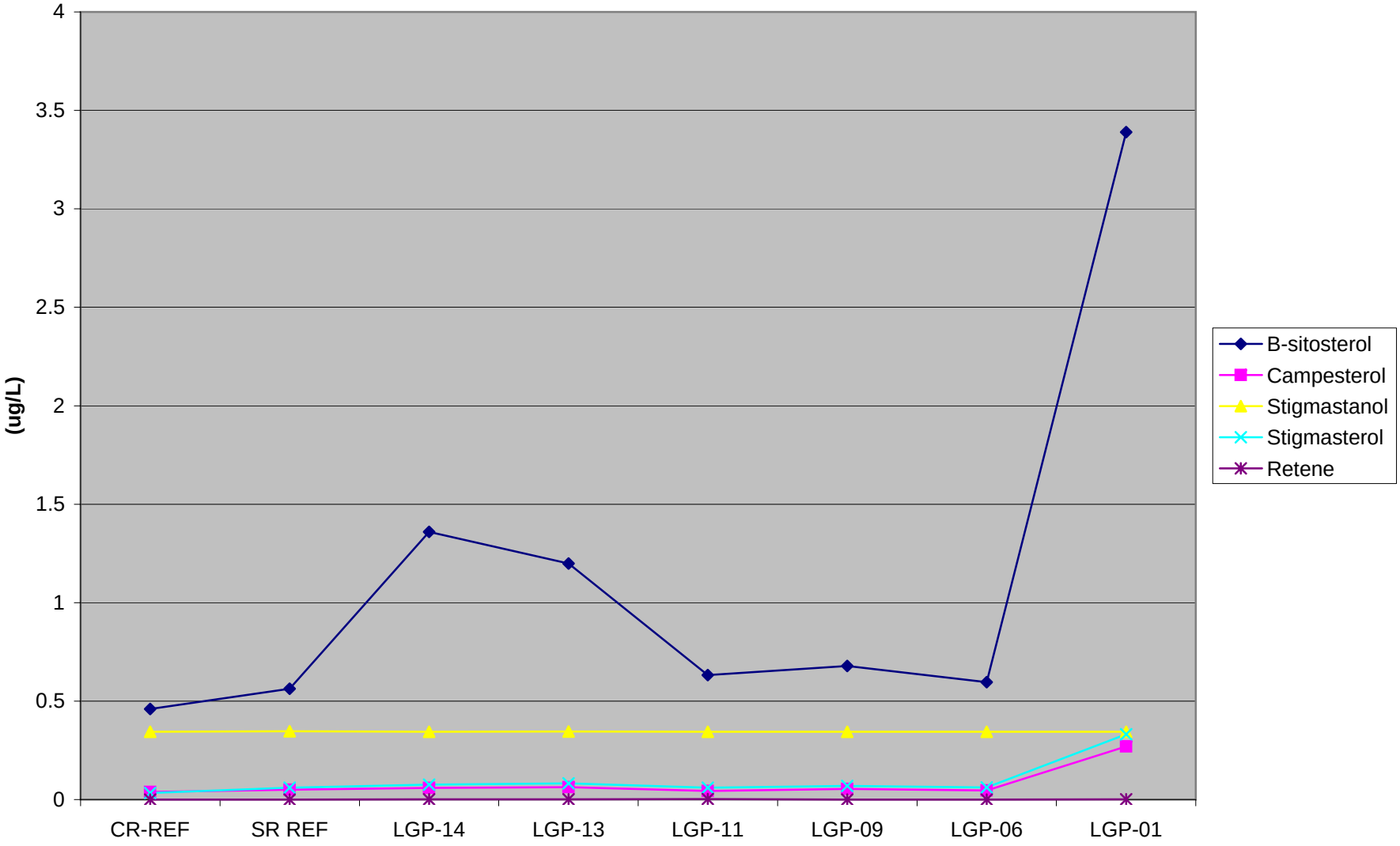


Figure 13b. Phytosterols in Effluent

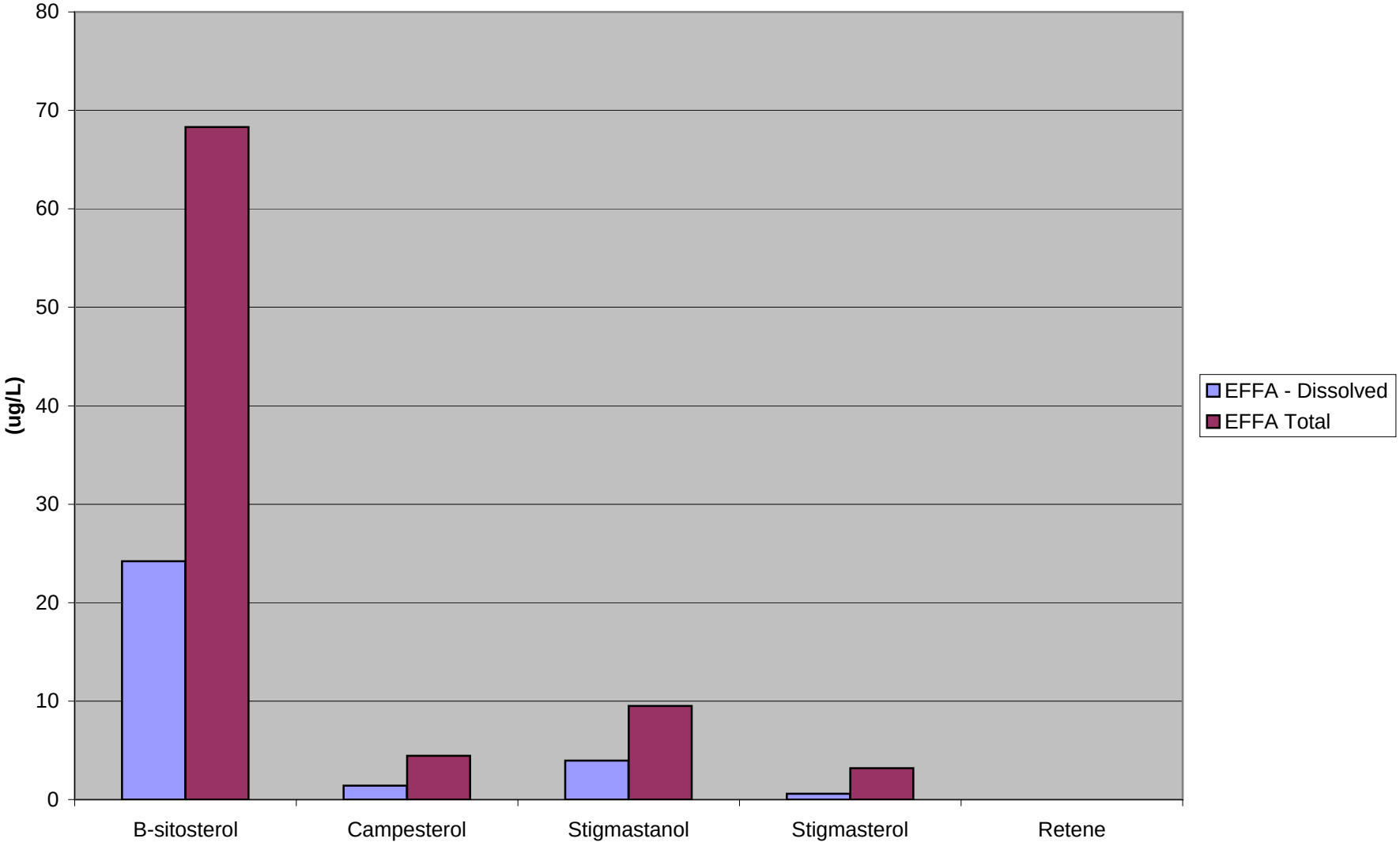


Figure 14. Quarterly Chloroform Concentrations

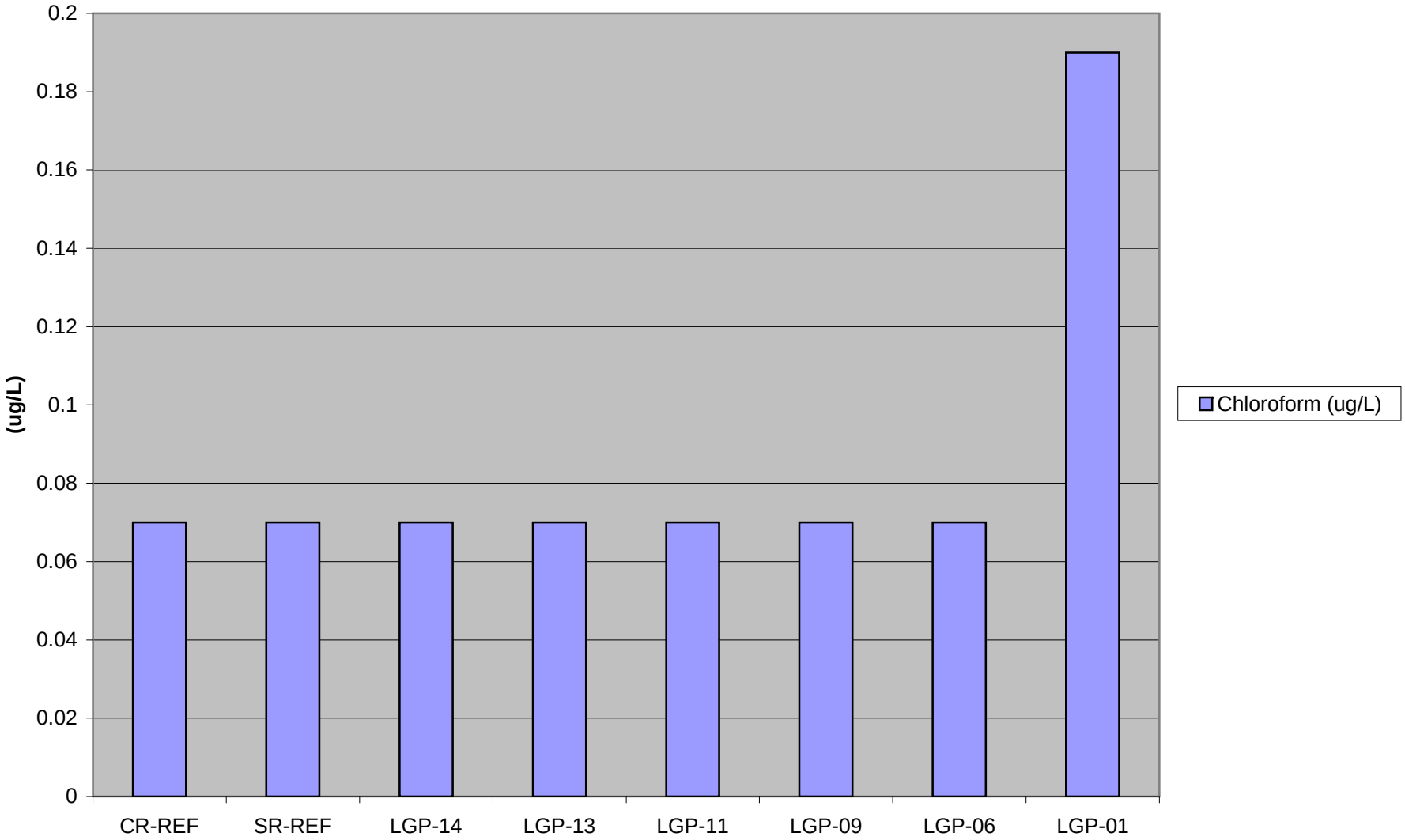


Figure 15. Quarterly DOC and TOC in Receiving Water

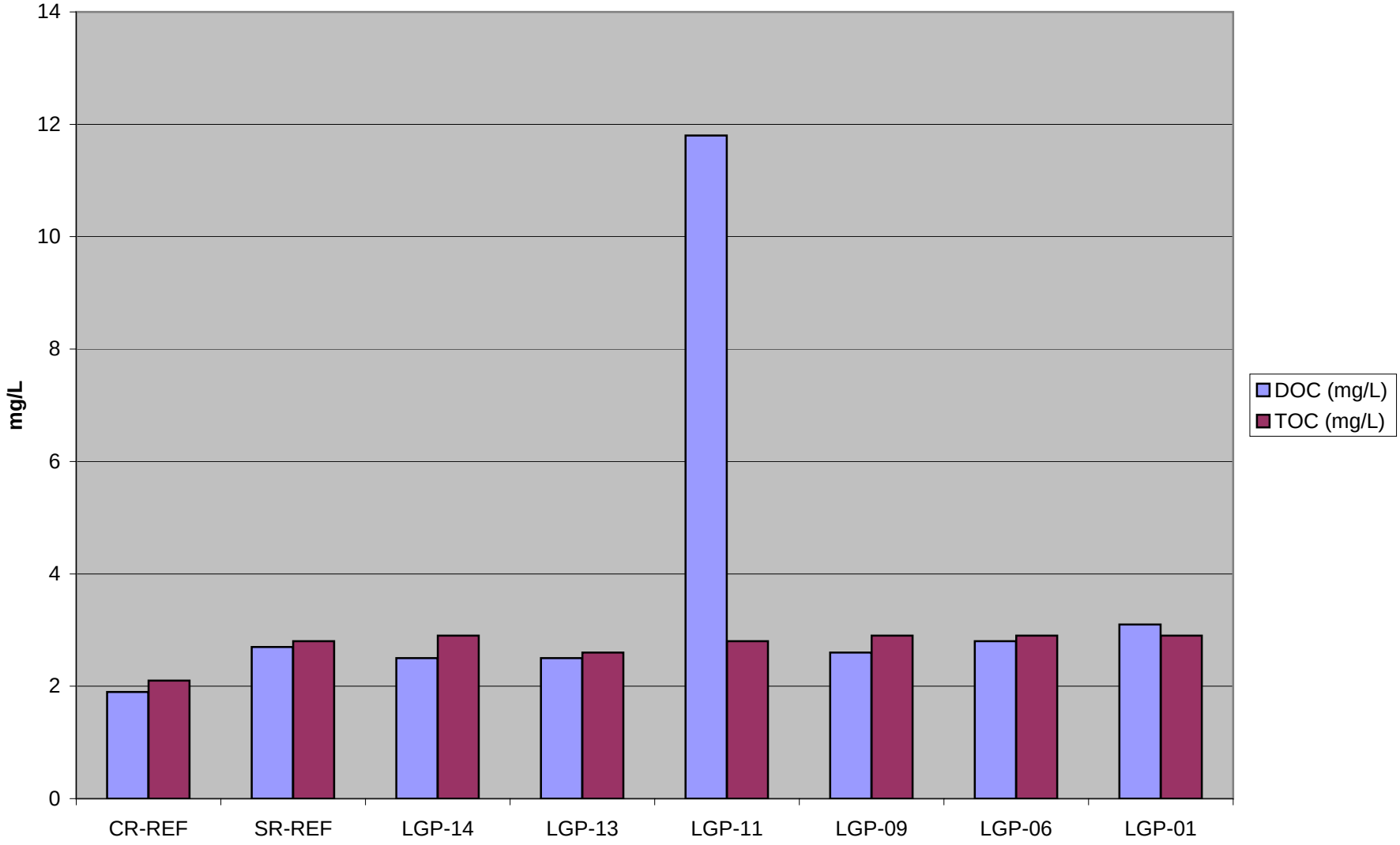


Figure 16a. Dioxins in Receiving Water

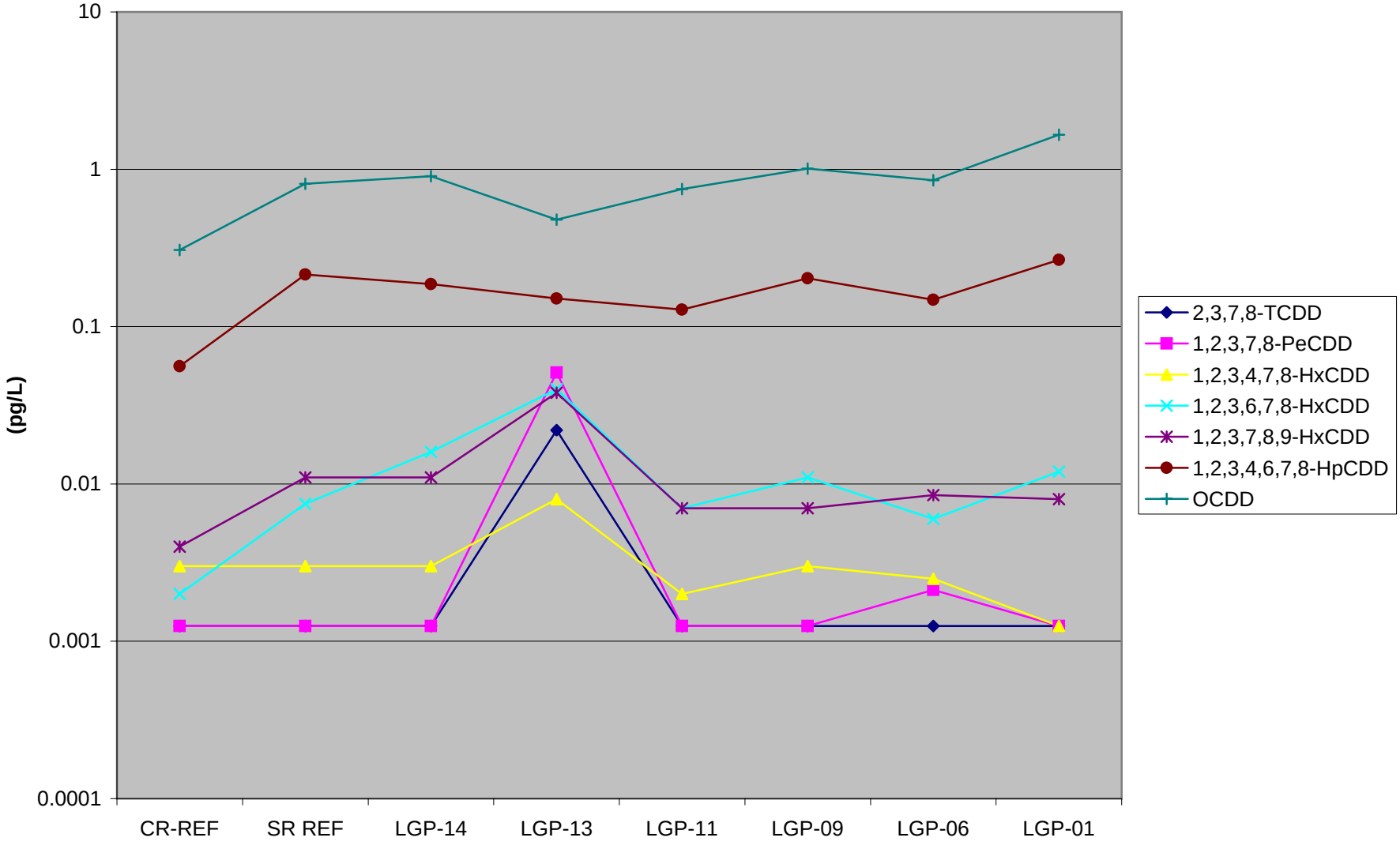


Figure 16b. Dioxins in Effluent

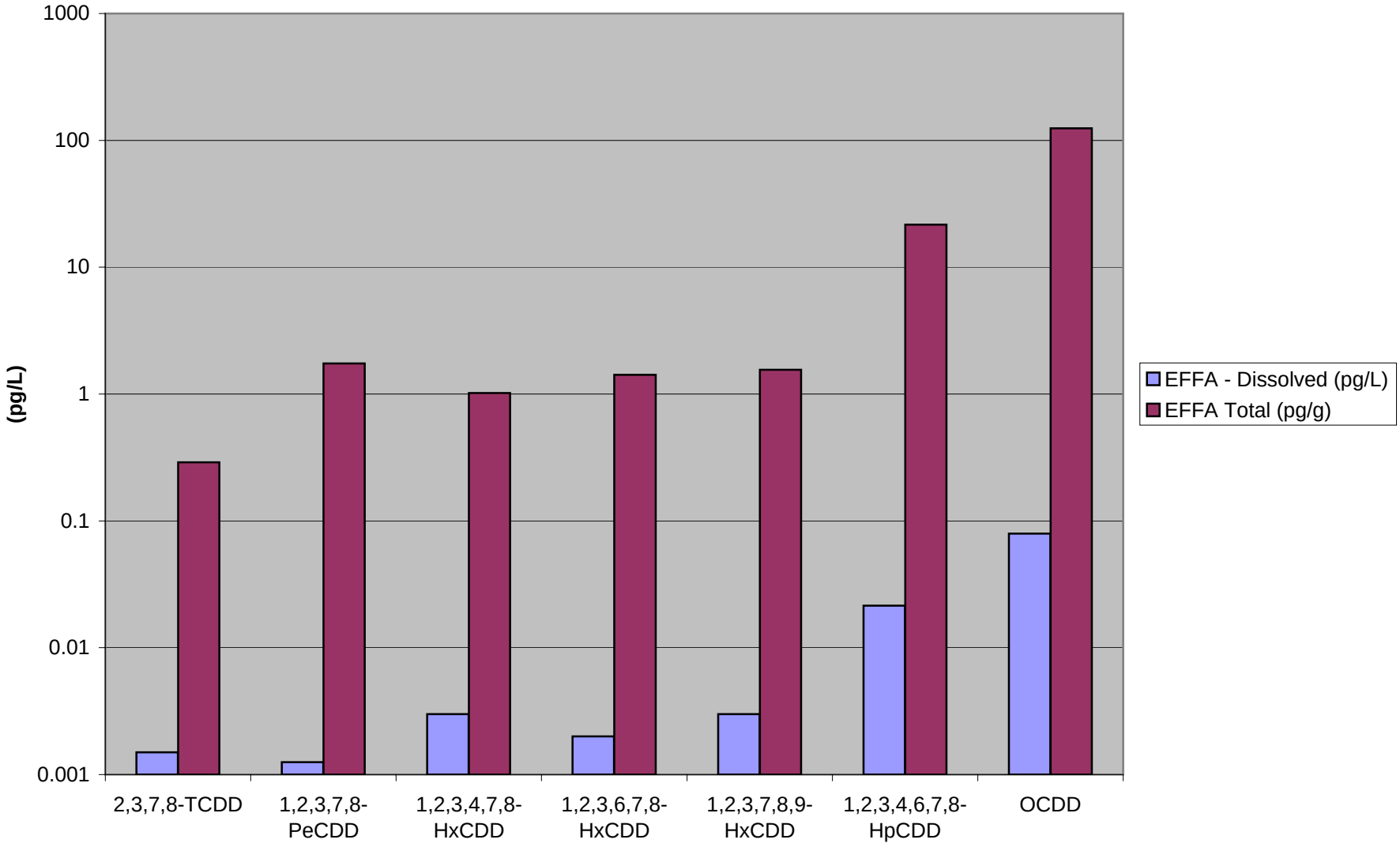


Figure 17a. Furans in Receiving Water

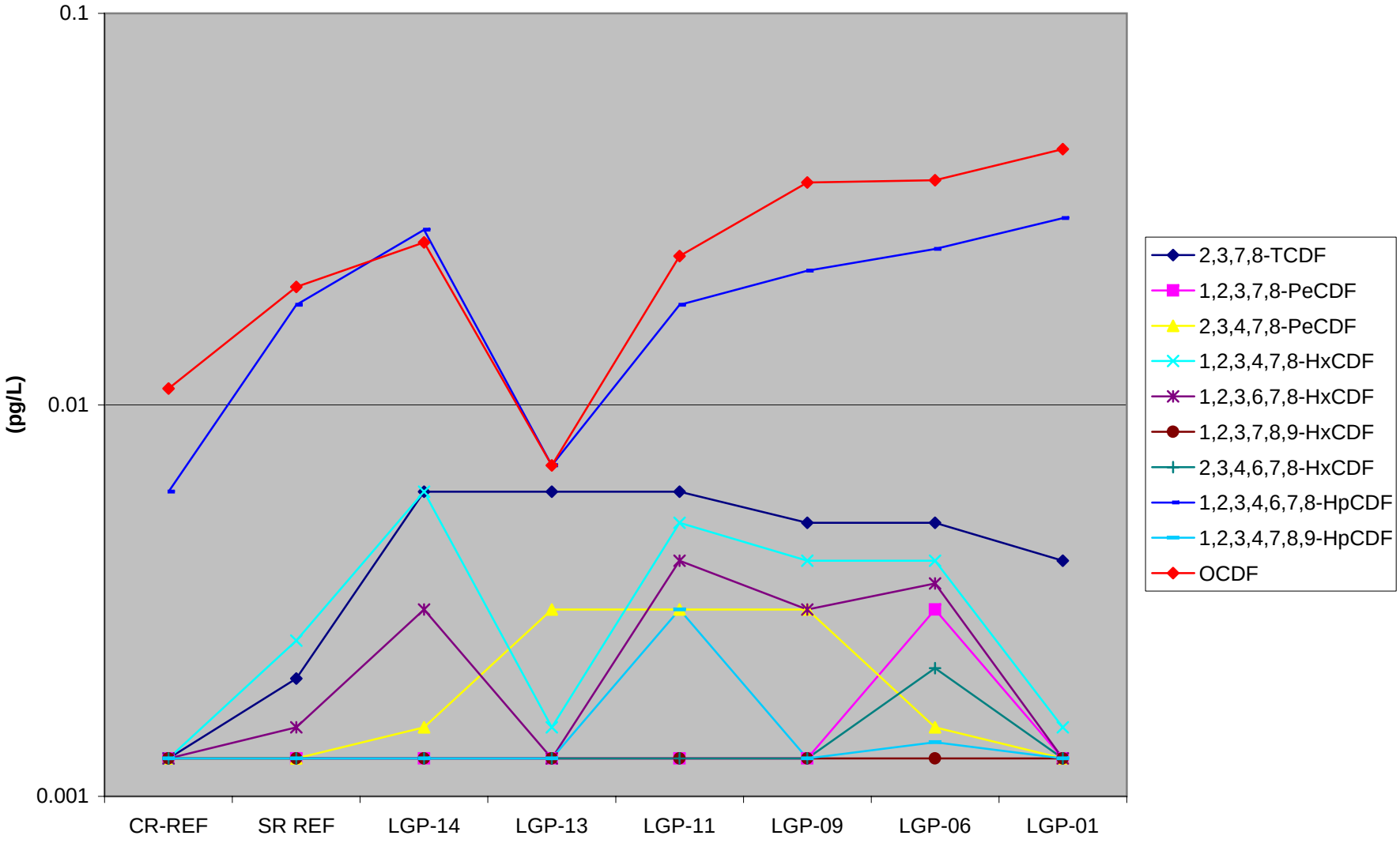


Figure 17b. Furans in Effluent

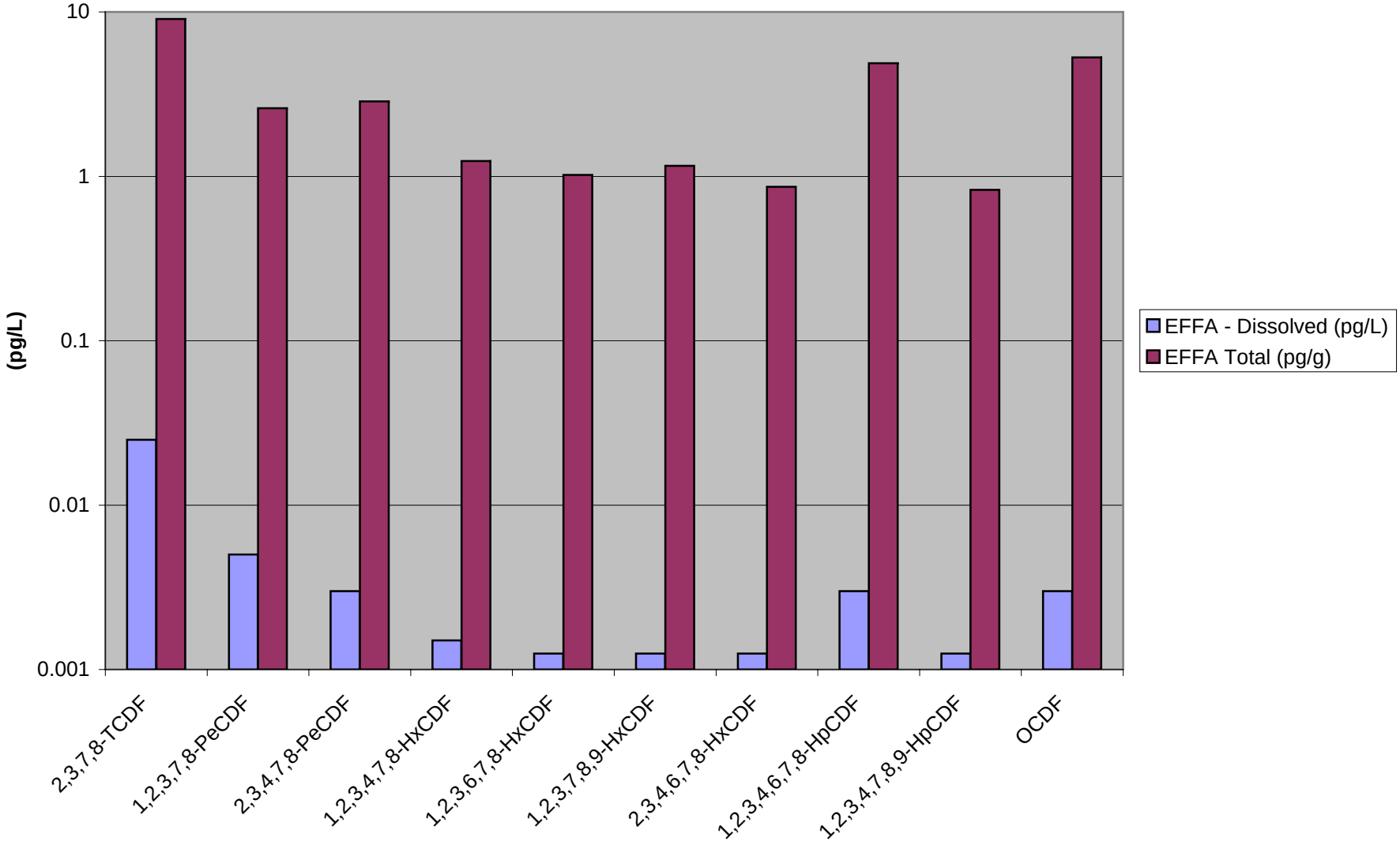


Table 1
Coordinates of Sample Locations on the Snake River and Clearwater River.
Potlatch Lewiston Mill

Sample ID	Latitude	Longitude
CR-REF	46 15.2988	-116 33.51
SR-REF	46 23.247	-117 02.731
LGP-14	46 25.8579	-117 02.4506
LGP-13	46 25.5650	-117 02.5940
LGP-11	46 25.5418	-117 03.9994
LGP-09	46 24.9105	-117 05.4103
LGP-06	46 25.6274	-117 09.5797
LGP-01	46 33.2666	-117 16.5655

Table 2
Mean Velocity Results from Weekly Receiving Water Monitoring Study
Potlatch Lewiston Mill

Mean Velocity (ft/sec)

Sampling Date	SR REF	CR REF	LGP-13	LGP-09	LGP-06	LGP-01
07/07/2005						
07/13/2005	0.23	1.57	0.26	0.55	0.40	0.29
07/20/2005	0.40	1.54	0.18	0.52	0.17	0.19
07/27/2005	0.20	1.77	0.12	0.43	0.29	0.19
08/03/2005	0.19	1.62	0.19	0.26	0.31	0.09
08/10/2005	0.40	1.58	0.17	0.35	0.03	0.19
08/17/2005	0.06	1.39	0.39	0.12	0.17	0.08
08/24/2005	0.23	1.08	0.19	0.20		0.18
08/30/2005	0.33	0.86	0.12	0.14	0.24	0.31
09/07/2005	0.14	0.84	0.14	0.07	0.14	0.03
09/14/2005	0.23	1.27	0.05	0.15	0.15	0.08
09/21/2005	0.18	0.43	0.07	0.16	0.06	0.02
09/27/2005	0.22	0.39		0.13		0.08
10/05/2005	0.28	0.43	0.14	0.16	0.56	0.18
10/11/2005	0.18	0.83	0.09	0.12	0.15	0.21
10/19/2005	0.10	0.50	0.16	0.06	0.13	0.21
10/25/2005	0.22	0.72	0.11	0.09	0.13	0.19
Average	**0.22**	**1.05**	**0.16**	**0.22**	**0.21**	**0.16**
Median	**0.22**	**0.97**	**0.14**	**0.15**	**0.16**	**0.19**
Min	**0.06**	**0.39**	**0.05**	**0.06**	**0.03**	**0.02**
Max	**0.40**	**1.77**	**0.39**	**0.55**	**0.56**	**0.31**

Table 3
Mean pH Results from Weekly Receiving Water Monitoring Study
Potlatch Lewiston Mill

Mean pH

Sampling Date	SR REF	CR REF	LGP-13	LGP-09	LGP-06	LGP-01
07/07/2005	8.23	7.81	8.28	8.18	7.92	7.77
07/13/2005	8.56	8.09	8.48	8.29	8.72	8.68
07/20/2005	8.03	7.31	8.20	8.25	8.12	8.15
07/27/2005	8.18	7.61	8.08	8.13	7.97	7.89
08/03/2005	8.07	7.75	8.15	8.37	8.05	7.91
08/10/2005	8.02	7.61	8.13	8.25	8.26	8.13
08/17/2005	8.01	7.83	8.13	8.03	7.87	8.00
08/24/2005	7.97	7.80	8.10	8.30	8.03	7.97
08/30/2005	7.97	7.38	8.10	7.78	7.87	8.12
09/07/2005	8.00	7.94	8.29	7.75	8.09	8.18
09/14/2005	7.72	7.41	8.33	7.86	7.79	7.98
09/21/2005	8.10	7.73	8.21	8.16	8.16	7.99
09/27/2005	7.69	7.95		8.03		7.84
10/05/2005	7.46	7.83	8.04	8.06	7.87	7.62
10/11/2005				8.11	8.11	7.99
10/19/2005	7.96	7.88	8.22	8.22	8.20	8.05
10/25/2005				8.23	8.22	7.56
Average	**8.00**	**7.73**	**8.20**	**8.12**	**8.08**	**7.99**
Median	**8.01**	**7.80**	**8.18**	**8.16**	**8.07**	**7.99**
Min	**7.46**	**7.31**	**8.04**	**7.75**	**7.79**	**7.56**
Max	**8.56**	**8.09**	**8.48**	**8.37**	**8.72**	**8.68**

Table 4
Mean Dissolved Oxygen (DO) Results from Weekly Receiving Water Monitoring Study
Potlatch Lewiston Mill

Mean Dissolved Oxygen (mg/L)

Sampling Date	SR REF	CR REF	LGP-13	LGP-09	LGP-06	LGP-01
07/07/2005	9.2	10.1	9.2	10.1	9.5	
07/13/2005	7.5	8.0	8.1	9.2	8.9	10.4
07/20/2005	7.1	9.2	8.7	9.7	8.4	9.3
07/27/2005	7.7	9.3	9.0	9.1	9.1	9.1
08/03/2005	7.6	10.3	9.9	10.2	9.4	9.2
08/10/2005	6.2	11.0	9.4	9.9	9.4	9.1
08/17/2005	8.2	11.0	9.4	10.1	9.6	9.9
08/24/2005	8.0	10.6	9.2	9.6	8.9	9.1
08/30/2005	8.9	11.3	9.9	10.1	9.6	9.7
09/07/2005	8.8	10.0	10.0	10.0	9.5	9.9
09/14/2005	9.7	12.3	11.1	10.9	10.1	9.9
09/21/2005	9.0	11.2	9.9	9.6	9.9	10.1
09/27/2005	9.6	11.5		9.8		9.3
10/05/2005	10.4	12.8	10.8	10.7	10.5	9.4
10/11/2005				10.3	10.6	9.6
10/19/2005	9.8	11.1	10.2	10.0	10.6	9.9
10/25/2005				9.9	10.2	9.3
Average	**8.5**	**10.6**	**9.6**	**9.9**	**9.6**	**9.6**
Median	**8.8**	**11.0**	**9.6**	**10.0**	**9.5**	**9.5**
Min	**6.2**	**8.0**	**8.1**	**9.1**	**8.4**	**9.1**
Max	**10.4**	**12.8**	**11.1**	**10.9**	**10.6**	**10.4**

Table 5
Mean Temperature Results from Weekly Receiving Water Monitoring Study
Potlatch Lewiston Mill

Mean Temperature (degrees Celsius)

Sampling Date	SR REF	CR REF	LGP-13	LGP-09	LGP-06	LGP-01
07/07/2005	20.65	14.05	18.90	19.14	19.82	20.09
07/13/2005	21.67	14.44	18.71	18.74	19.18	19.64
07/20/2005	22.52	11.71	16.51	18.38	18.95	19.42
07/27/2005	18.40	11.34	16.10	16.98	17.92	19.03
08/03/2005	22.08	11.15	16.49	16.75	18.21	20.33
08/10/2005	23.09	11.68	16.17	17.49	19.08	19.39
08/17/2005	22.02	10.67	17.27	16.88	17.63	19.43
08/24/2005	21.10	11.57	16.58	18.28	19.12	19.68
08/30/2005	21.26	11.70	16.74	18.16	18.68	19.45
09/07/2005	20.60	11.70	16.53	17.52	17.67	18.71
09/14/2005	19.13	11.55	15.89	15.44	16.25	17.25
09/21/2005	18.31	13.23	17.04	17.61	17.77	17.40
09/27/2005	17.47	12.31		16.60		16.94
10/05/2005	15.34	9.66	14.76	14.71	14.70	15.49
10/11/2005	15.43		15.65	14.38	14.64	14.93
10/19/2005	14.98	10.66	14.86	14.35	14.43	14.53
10/25/2005	14.07	9.78	14.61	14.31	14.41	15.38
Average	**19.30**	**11.70**	**16.42**	**16.81**	**17.40**	**18.06**
Median	**20.60**	**11.62**	**16.50**	**16.98**	**17.85**	**19.03**
Min	**14.07**	**9.66**	**14.61**	**14.31**	**14.41**	**14.53**
Max	**23.09**	**14.44**	**18.90**	**19.14**	**19.82**	**20.33**

Table 6
Total Suspended Solids (TSS, mg/L) Results from Weekly Receiving Water Monitoring Study
Potlatch Lewiston Mill

				Summary of Upstream Samples					
Sampling Date	SR-REF-S	SR-REF-MD	CR-REF-S	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	8	12	2.5 U	2	3	2.5	12	12	8
07/13/2005	7	6	2.5 U	2	3	2.5	7	7	6
07/20/2005	2.5 U	2.5 U	2.5 U	0	3	ND	ND	ND	ND
07/27/2005	2.5 U	2.5 U	2.5 U	0	3	ND	ND	ND	ND
08/03/2005	2.5 U	2.5 U	2.5 U	0	3	ND	ND	ND	ND
08/10/2005	2.5 U	2.5 U	2.5 U	0	3	ND	ND	ND	ND
08/17/2005	2.5 U	2.5 U	2.5 U	0	3	ND	ND	ND	ND
08/24/2005	2.5 U	2.5 U	2.5 U	0	3	ND	ND	ND	ND
08/30/2005	2.5 U	2.5 U	2.5 U	0	3	ND	ND	ND	ND
09/07/2005	2.5 U	2.5 U	2.5 U	0	3	ND	ND	ND	ND
09/15/2005	2.5 U	2.5 U	2.5 U	0	3	ND	ND	ND	ND
09/21/2005	2.5 U	2.5 U	2.5 U	0	3	ND	ND	ND	ND
09/27/2005	2.5 U	2.5 U	2.5 U	0	3	ND	ND	ND	ND
10/05/2005	2.5 U	2.5 U	2.5 U	0	3	ND	ND	ND	ND
10/11/2005	2.5 U	2.5 U	2.5 U	0	3	ND	ND	ND	ND
10/19/2005	2.5 U	2.5 U	2.5 U	0	3	ND	ND	ND	ND
10/25/2005	2.5 U	2.5 U	2.5 U	0	3	ND	ND	ND	ND
Average	**3.088**	**3.265**	**2.500**						
Median	**2.5**	**2.5**	**2.5**						
Min	**2.5**	**2.5**	**2.5**						
Max	**8**	**12**	**2.5**						
Samples	**17**	**17**	**17**						
Detects	**2**	**2**	**0**						

											Summary of Downstream Samples					
Sampling Date	LGP-13-S	LGP-13-MD	LGP-11-S	LGP-11-MD	LGP-09-S	LGP-09-MD	LGP-06-S	LGP-06-MD	LGP-01-S	LGP-01-MD	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	8	7	2.5 U	2.5 U	5	2.5 U	2.5 U	5	2.5 U	6	5	10	2.5	8	4.35	3.75
07/13/2005	8	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	9	11	3	10	2.5	11	4.55	2.5
07/20/2005	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0	10	ND	ND	ND	ND
07/27/2005	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0	10	ND	ND	ND	ND
08/03/2005	1.25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0	10	ND	ND	ND	ND
08/10/2005	1.25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0	10	ND	ND	ND	ND
08/17/2005	1.25 U	2.5 U	2.5 U	7	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	1	10	1.25	7	2.825	2.5
08/24/2005	1.25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0	10	ND	ND	ND	ND
08/30/2005	1.25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	7	1	10	1.25	7	2.825	2.5
09/07/2005	1.25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	8	2.5 U	1	10	1.25	8	2.925	2.5
09/15/2005	1.25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0	10	ND	ND	ND	ND
09/21/2005	1.25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	8	2.5 U	1	10	1.25	8	2.925	2.5
09/27/2005	1.25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0	10	ND	ND	ND	ND
10/05/2005	1.25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0	10	ND	ND	ND	ND
10/11/2005	1.25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0	10	ND	ND	ND	ND
10/19/2005	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0	10	ND	ND	ND	ND
10/25/2005	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5	2.5 U	1	10	2.5	5	2.75	2.5
Average	**2.338**	**2.765**	**2.500**	**2.765**	**2.647**	**2.500**	**2.500**	**2.647**	**3.676**	**3.471**						
Median	**1.25**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**						
Min	**1.25**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**						
Max	**8**	**7**	**2.5**	**7**	**5**	**2.5**	**2.5**	**5**	**9**	**11**						
Samples	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**						
Detects	**2**	**1**	**0**	**1**	**1**	**0**	**0**	**1**	**4**	**3**						

Notes:
U indicates undetected

Table 7
Biochemical Oxygen Demand (BOD, mg/L) Results from Weekly Receiving Water Monitoring Study
Potlatch Lewiston Mill

				Summary of Upstream Samples					
Sampling Date	SR-REF-S	SR-REF-MD	CR-REF-S	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	1.2 J	1.2 J	1.7 J	3	3	1.2	1.7	1.7	1.2
07/13/2005	1.1 JX	0.8 JX	0.5 JX	3	3	0.5	1.1	1.1	0.8
07/20/2005	0.6 JX	0.7 JX	0.7 JX	3	3	0.6	0.7	0.7	0.7
07/27/2005	0.25 U	0.25 U	0.25 U	0	3	ND	ND	ND	ND
08/03/2005	0.5	0.6	0.5	3	3	0.5	0.6	0.6	0.5
08/10/2005	0.25 U	0.25 U	0.25 U	0	3	ND	ND	ND	ND
08/17/2005	1.3	1.5	0.9	3	3	0.9	1.5	1.5	1.3
08/24/2005	0.25 U	0.25 U	0.25 U	0	3	ND	ND	ND	ND
08/30/2005	0.6	0.25 U	0.8	2	3	0.25	0.8	0.8	0.6
09/07/2005	0.25 U	0.25 U	0.25 U	0	3	ND	ND	ND	ND
09/15/2005	0.25 U	0.25 U	0.25 U	0	3	ND	ND	ND	ND
09/21/2005	0.25 U	0.25 U	0.25 U	0	3	ND	ND	ND	ND
09/27/2005	1	0.25 U	0.25 U	1	3	0.25	1	1	0.25
10/05/2005	0.9	0.25 U	0.25 U	1	3	0.25	0.9	0.9	0.25
10/11/2005	0.25 U	0.25 U	0.25 U	0	3	ND	ND	ND	ND
10/19/2005	0.25 UX	0.25 UX	0.25 UX	3	3	0.25	0.25	0.25	0.25
10/25/2005	0.25 UX	0.25 UX	0.25 UX	3	3	0.25	0.25	0.25	0.25
Average	**0.556**	**0.459**	**0.462**						
Median	**0.25**	**0.25**	**0.25**						
Min	**0.25**	**0.25**	**0.25**						
Max	**1.3**	**1.5**	**1.7**						
Samples	**17**	**17**	**17**						
Detects	**10**	**7**	**8**						

											Summary of Downstream Samples					
Sampling Date	LGP-13-S	LGP-13-MD	LGP-11-S	LGP-11-MD	LGP-09-S	LGP-09-MD	LGP-06-S	LGP-06-MD	LGP-01-S	LGP-01-MD	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	1.1 J	1 J	0.9 J	1 J	1 J	1.2 J	0.45 U	0.45 U	1.5 J	1 J	8	10	0.45	1.5	0.96	1
07/13/2005	1 J	1 J	0.8 J	0.7 J	1.2 J	1 J	1.2 JX	0.8 JX	1.7 JX	1.1 JX	10	10	0.7	1.7	1.05	1
07/20/2005	0.7 J	0.8 J	0.8 J	1 J	1.1 J	0.8 J	1.3 JX	1.1 JX	1.7 JX	1.1 JX	10	10	0.7	1.7	1.04	1.05
07/27/2005	0.25 U	0.6 J	0.6 J	0.6 J	0.25 U	0.25 U	0.25 U	0.25 U	0.6 J	0.25 U	4	10	0.25	0.6	0.39	0.25
08/03/2005	0.7	0.25 U	0.7	1	0.7	0.7	1.9	0.25 U	1.5	0.7	8	10	0.25	1.9	0.84	0.7
08/10/2005	0.125 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.8	0.25 U	1	10	0.125	0.8	0.2925	0.25
08/17/2005	1.5	1.1	1.2	1	1.3	1.4	1	1.2	1.7	1.2	10	10	1	1.7	1.26	1.2
08/24/2005	0.125 U	0.25 U	0.25 U	0.7	0.25 U	0.25 U	0.6	0.25 U	1.3	0.25 U	3	10	0.125	1.3	0.4225	0.25
08/30/2005	0.2375 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.6	1.1	0.7	3	10	0.2375	1.1	0.41375	0.25
09/07/2005	0.375	0.25 U	0.25 U	0.5	0.375	0.25 U	1	0.8	7	0.8	7	10	0.25	7	1.16	0.4375
09/15/2005	0.125 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	3.6	0.25 U	1	10	0.125	3.6	0.5725	0.25
09/21/2005	0.125 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	7	0.6	2	10	0.125	7	0.9475	0.25
09/27/2005	0.2125 U	0.25 U	0.6	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	1	10	0.2125	0.6	0.28125	0.25
10/05/2005	0.125 U	0.6	0.25 U	0.25 U	0.825	0.25 U	0.6	0.6	0.25 U	0.25 U	4	10	0.125	0.825	0.4	0.25
10/11/2005	0.125 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0	10	ND	ND	ND	ND
10/19/2005	0.25 U	0.25 U	0.25 UX	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	1	10	0.25	0.25	0.25	0.25
10/25/2005	0.25 U	0.25 U	0.25 UX	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	1	10	0.25	0.25	0.25	0.25
Average	**0.4308824**	**0.4617647**	**0.4764706**	**0.5147059**	**0.5294118**	**0.4764706**	**0.6058824**	**0.4735294**	**1.8088235**	**0.555882353**						
Median	**0.250**	**0.250**	**0.250**	**0.250**	**0.250**	**0.250**	**0.250**	**0.250**	**1.300**	**0.250**						
Min	**0.125**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**						
Max	**1.5**	**1.1**	**1.2**	**1**	**1.3**	**1.4**	**1.9**	**1.2**	**7**	**1.2**						
Samples	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**						
Detects	**6**	**6**	**9**	**8**	**7**	**5**	**7**	**6**	**12**	**8**						

Notes:
U indicates undetected
J indicates estimated value
X - Holding time exceeded

Table 8
Ammonia Nitrogen Results (mg/L) from Weekly Receiving Water Monitoring Study
Potlatch Lewiston Mill

				Summary of Upstream Samples					
Sampling Date	SR-REF-S	SR-REF-MD	CR-REF-S	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	0.02 J	0.02 J	0.02 J	3	3	0.02	0.02	0.02	0.02
07/13/2005	0.006 J	0.004 J	0.005 J	3	3	0.004	0.006	0.006	0.005
07/20/2005	0.01 U	0.01 U	0.01 U	0	3	ND	ND	ND	ND
07/27/2005	0.01 U	0.01 U	0.01 U	0	3	ND	ND	ND	ND
08/03/2005	0.03	0.03	0.02	3	3	0.02	0.03	0.03	0.03
08/10/2005	0.01 U	0.01 U	0.01 U	0	3	ND	ND	ND	ND
08/17/2005	0.01 U	0.01 U	0.01 U	0	3	ND	ND	ND	ND
08/24/2005	0.02	0.02	0.005	3	3	0.005	0.02	0.02	0.02
08/30/2005	0.01 U	0.01 U	0.01 U	0	3	ND	ND	ND	ND
09/07/2005	0.01 U	0.01 U	0.01 U	0	3	ND	ND	ND	ND
09/15/2005	0.01 U	0.01 U	0.01 U	0	3	ND	ND	ND	ND
09/21/2005	0.01	0.02	0.02	3	3	0.01	0.02	0.02	0.02
09/27/2005	0.03	0.03	0.03	3	3	0.03	0.03	0.03	0.03
10/05/2005	0.01 U	0.01 U	0.01 U	0	3	ND	ND	ND	ND
10/11/2005	0.01 U	0.01 U	0.01 U	0	3	ND	ND	ND	ND
10/19/2005	0.01 U	0.01 U	0.01 U	0	3	ND	ND	ND	ND
10/25/2005	0.01 U	0.01 U	0.01 U	0	3	ND	ND	ND	ND
Average	**0.013**	**0.014**	**0.012**						
Median	**0.01**	**0.01**	**0.01**						
Min	**0.006**	**0.004**	**0.005**						
Max	**0.03**	**0.03**	**0.03**						
Samples	**17**	**17**	**17**						
Detects	**6**	**6**	**6**						

											Summary of Downstream Samples					
Sampling Date	LGP-13-S	LGP-13-MD	LGP-11-S	LGP-11-MD	LGP-09-S	LGP-09-MD	LGP-06-S	LGP-06-MD	LGP-01-S	LGP-01-MD	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	0.01 U	0.03 J	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 J	0.02 J	3	10	0.01	0.03	0.0155	0.01
07/13/2005	0.02	0.002 U	0.09	0.04	0.008 J	0.008 J	0.01	0.01	0.01	0.04	9	10	0.002	0.09	0.0238	0.01
07/20/2005	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0	10	ND	ND	ND	ND
07/27/2005	0.11	0.1	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	2	10	0.01	0.11	0.029	0.01
08/03/2005	0.005 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02	0.03	0.05	0.04	4	10	0.005	0.05	0.0195	0.01
08/10/2005	0.04	0.04	0.01 U	0.04	0.025	0.01 U	0.02	0.01 U	0.06	0.02	7	10	0.01	0.06	0.0275	0.0225
08/17/2005	0.005 U	0.01 U	0.01 U	0.01 U	0.015	0.05	0.01 U	0.01 U	0.09	0.05	4	10	0.005	0.09	0.026	0.01
08/24/2005	0.02	0.008	0.01	0.02	0.02	0.02	0.01	0.01	0.05	0.06	10	10	0.008	0.06	0.0228	0.02
08/30/2005	0.005 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0	10	ND	ND	ND	ND
09/07/2005	0.005 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.04	1	10	0.005	0.04	0.0125	0.01
09/15/2005	0.005	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	1	10	0.005	0.01	0.0095	0.01
09/21/2005	0.025	0.02	0.02	0.03	0.02	0.02	0.01	0.03	0.07	0.02	10	10	0.01	0.07	0.0265	0.02
09/27/2005	0.025	0.03	0.03	0.04	0.03	0.04	0.03	0.04	0.03	0.03	10	10	0.025	0.04	0.0325	0.03
10/05/2005	0.005	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.04	0.03	3	10	0.005	0.04	0.0145	0.01
10/11/2005	0.005 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0	10	ND	ND	ND	ND
10/19/2005	0.01 U	0.01 U	0.01 U	0.02 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	1	10	0.01	0.02	0.011	0.01
10/25/2005	0.01 U	0.01 U	0.01 U	0.01 U	0.015 J/U	0.01 U	0.02 J	0.01 U	0.03 J	0.03 J	4	10	0.01	0.03	0.0155	0.01
Average	**0.0185294**	**0.0194118**	**0.0173529**	**0.0176471**	**0.0137059**	**0.0151765**	**0.0129412**	**0.0141176**	**0.0305882**	**0.025882353**						
Median	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	**0.020**	**0.020**						
Min	**0.005**	**0.002**	**0.01**	**0.01**	**0.008**	**0.008**	**0.01**	**0.01**	**0.01**	**0.01**						
Max	**0.11**	**0.1**	**0.09**	**0.04**	**0.03**	**0.05**	**0.03**	**0.04**	**0.09**	**0.06**						
Samples	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**						
Detects	**8**	**6**	**4**	**6**	**7**	**5**	**7**	**5**	**10**	**11**						

Notes:
U indicates undetected
J indicates estimated value

Table 9
Nitrate/Nitrite Nitrogen Results (mg/L) from Weekly Receiving Water Monitoring Study
Potlatch Lewiston Mill

				Summary of Upstream Samples					
Sampling Date	SR-REF-S	SR-REF-MD	CR-REF-S	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	0.16	0.16	0.02 J	3	3	0.02	0.16	0.16	0.16
07/13/2005	0.11	0.11	0.01 J	3	3	0.01	0.11	0.11	0.11
07/20/2005	0.16	0.22	0.01 J	3	3	0.01	0.22	0.22	0.16
07/27/2005	0.18	0.18	0.009 J	3	3	0.009	0.18	0.18	0.18
08/03/2005	0.27	0.27	0.02	3	3	0.02	0.27	0.27	0.27
08/10/2005	0.34	0.34	0.01	3	3	0.01	0.34	0.34	0.34
08/17/2005	0.32	0.32	0.01	3	3	0.01	0.32	0.32	0.32
08/24/2005	0.38	0.38	0.02	3	3	0.02	0.38	0.38	0.38
08/30/2005	0.4	0.4	0.02	3	3	0.02	0.4	0.4	0.4
09/07/2005	0.38	0.38	0.013	3	3	0.013	0.38	0.38	0.38
09/15/2005	0.41	0.4	0.02	3	3	0.02	0.41	0.41	0.4
09/21/2005	0.43	0.44	0.012	3	3	0.012	0.44	0.44	0.43
09/27/2005	0.52	0.51	0.017	3	3	0.017	0.52	0.52	0.51
10/05/2005	0.53	0.52	0.035	3	3	0.035	0.53	0.53	0.52
10/11/2005	0.62	0.61	0.0015 U	2	3	0.0015	0.62	0.62	0.61
10/19/2005	0.53	0.53	0.004 J	3	3	0.004	0.53	0.53	0.53
10/25/2005	0.55	0.55	0.009 J	3	3	0.009	0.55	0.55	0.55
Average	**0.370**	**0.372**	**0.014**						
Median	**0.38**	**0.38**	**0.012**						
Min	**0.11**	**0.11**	**0.0015**						
Max	**0.62**	**0.61**	**0.035**						
Samples	**17**	**17**	**17**						
Detects	**17**	**17**	**16**						

											Summary of Downstream Samples					
Sampling Date	LGP-13-S	LGP-13-MD	LGP-11-S	LGP-11-MD	LGP-09-S	LGP-09-MD	LGP-06-S	LGP-06-MD	LGP-01-S	LGP-01-MD	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	0.17	0.19	0.18	0.17	0.21	0.17	0.18	0.16	0.13	0.16	10	10	0.13	0.21	0.172	0.17
07/13/2005	0.13	0.09	0.12	0.14	0.11	0.09	0.07	0.05 J	0.07	0.05	10	10	0.05	0.14	0.092	0.09
07/20/2005	0.18	0.09	0.19	0.14	0.175	0.09	0.16	0.1	0.06	0.12	10	10	0.06	0.19	0.1305	0.13
07/27/2005	0.16	0.13	0.16	0.09	0.14	0.06	0.12	0.1	0.045 J	0.042 J	10	10	0.042	0.16	0.1047	0.11
08/03/2005	0.2	0.12	0.21	0.1	0.19	0.11	0.23	0.16	0.08	0.13	10	10	0.08	0.23	0.153	0.145
08/10/2005	0.22	0.12	0.25	0.13	0.245	0.12	0.22	0.15	0.06	0.17	10	10	0.06	0.25	0.1685	0.16
08/17/2005	0.26	0.18	0.24	0.14	0.24	0.17	0.23	0.17	0.08	0.12	10	10	0.08	0.26	0.183	0.175
08/24/2005	0.315	0.23	0.32	0.22	0.31	0.21	0.28	0.24	0.14	0.14	10	10	0.14	0.32	0.2405	0.235
08/30/2005	0.3	0.19	0.31	0.22	0.32	0.23	0.3	0.28	0.17	0.17	10	10	0.17	0.32	0.249	0.255
09/07/2005	0.3	0.21	0.32	0.2	0.325	0.19	0.29	0.24	0.1	0.2	10	10	0.1	0.325	0.2375	0.225
09/15/2005	0.32	0.22	0.34	0.25	0.335	0.23	0.32	0.23	0.2	0.28	10	10	0.2	0.34	0.2725	0.265
09/21/2005	0.4	0.34	0.39	0.38	0.39	0.38	0.39	0.37	0.21	0.26	10	10	0.21	0.4	0.351	0.38
09/27/2005	0.49	0.49	0.5	0.46	0.485	0.46	0.43	0.41	0.39	0.37	10	10	0.37	0.5	0.4485	0.46
10/05/2005	0.57	0.51	0.55	0.52	0.56	0.53	0.49	0.48	0.41	0.41	10	10	0.41	0.57	0.503	0.515
10/11/2005	0.57	0.48	0.52	0.45	0.52	0.49	0.47	0.47	0.49	0.48	10	10	0.45	0.57	0.494	0.485
10/19/2005	0.52	0.47	0.48	0.44	0.49	0.44	0.43	0.43	0.44	0.43	10	10	0.43	0.52	0.457	0.44
10/25/2005	0.53	0.51	0.51	0.45	0.47	0.47	0.46	0.44	0.43	0.43	10	10	0.43	0.53	0.47	0.465
Average	**0.3314706**	**0.2688235**	**0.3288235**	**0.2647059**	**0.3244118**	**0.2611765**	**0.2982353**	**0.2635294**	**0.2061765**	**0.233058824**						
Median	**0.300**	**0.210**	**0.320**	**0.220**	**0.320**	**0.210**	**0.290**	**0.240**	**0.140**	**0.170**						
Min	**0.13**	**0.09**	**0.12**	**0.09**	**0.11**	**0.06**	**0.07**	**0.05**	**0.045**	**0.042**						
Max	**0.57**	**0.51**	**0.55**	**0.52**	**0.56**	**0.53**	**0.49**	**0.48**	**0.49**	**0.48**						
Samples	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**						
Detects	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**						

Notes:
J indicates estimated value

Table 10
Total Kjeldahl Nitrogen (TKN, mg/L) Results from Weekly Receiving Water Monitoring Study
Potlatch Lewiston Mill

				Summary of Upstream Samples					
Sampling Date	SR-REF-S	SR-REF-MD	CR-REF-S	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	0.4	0.2	0.2	3	3	0.2	0.4	0.4	0.2
07/13/2005	0.1	0.1	0.2	3	3	0.1	0.2	0.2	0.1
07/20/2005	0.2	0.2	0.2	3	3	0.2	0.2	0.2	0.2
07/27/2005	0.2	0.2	0.1	3	3	0.1	0.2	0.2	0.2
08/03/2005	0.4	0.3	0.3	3	3	0.3	0.4	0.4	0.3
08/10/2005	0.2	0.3	0.3	3	3	0.2	0.3	0.3	0.3
08/17/2005	0.2	0.2	0.2	3	3	0.2	0.2	0.2	0.2
08/24/2005	0.4	0.4	0.1	3	3	0.1	0.4	0.4	0.4
08/30/2005	0.4	0.4	0.4	3	3	0.4	0.4	0.4	0.4
09/07/2005	0.3	0.3	0.2	3	3	0.2	0.3	0.3	0.3
09/15/2005	0.3	0.3	0.7	3	3	0.3	0.7	0.7	0.3
09/21/2005	0.5	0.5	0.6	3	3	0.5	0.6	0.6	0.5
09/27/2005	0.3	0.2	0.035 U	2	3	0.035	0.3	0.3	0.2
10/05/2005	0.3	0.2	0.2	3	3	0.2	0.3	0.3	0.2
10/11/2005	0.2	0.2	0.08	3	3	0.08	0.2	0.2	0.2
10/19/2005	0.2	0.035 U	0.2	2	3	0.035	0.2	0.2	0.2
10/25/2005	0.4	0.4	0.3	3	3	0.3	0.4	0.4	0.4
Average	**0.294**	**0.261**	**0.254**						
Median	**0.3**	**0.2**	**0.2**						
Min	**0.1**	**0.035**	**0.035**						
Max	**0.5**	**0.5**	**0.7**						
Samples	**17**	**17**	**17**						
Detects	**17**	**16**	**16**						

											Summary of Downstream Samples					
Sampling Date	LGP-13-S	LGP-13-MD	LGP-11-S	LGP-11-MD	LGP-09-S	LGP-09-MD	LGP-06-S	LGP-06-MD	LGP-01-S	LGP-01-MD	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	0.3	0.2	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	10	10	0.2	0.4	0.23	0.2
07/13/2005	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	10	10	0.1	0.2	0.17	0.2
07/20/2005	0.2	0.2	0.2	0.2	0.25	0.2	0.3	0.2	0.3	0.4	10	10	0.2	0.4	0.245	0.2
07/27/2005	0.2	0.2	0.1	0.4	0.2	0.2	0.3	0.2	0.3	0.3	10	10	0.1	0.4	0.24	0.2
08/03/2005	0.45	0.2	0.4	0.4	0.35	0.4	0.4	0.4	0.3	0.4	10	10	0.2	0.45	0.37	0.4
08/10/2005	0.2	0.3	0.2	0.2	0.2	0.035 U	0.3	0.1	0.4	0.2	9	10	0.035	0.4	0.2135	0.2
08/17/2005	0.3	0.5	0.2	0.2	0.25	0.2	0.3	0.2	0.3	0.3	10	10	0.2	0.5	0.275	0.275
08/24/2005	0.2	0.2	0.3	0.3	0.35	0.5	0.3	0.3	0.3	0.3	10	10	0.2	0.5	0.305	0.3
08/30/2005	0.3	0.5	0.3	0.4	0.45	0.4	0.3	0.6	0.4	0.4	10	10	0.3	0.6	0.405	0.4
09/07/2005	0.35	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.8	0.3	10	10	0.2	0.8	0.295	0.2
09/15/2005	0.3	0.035 U	0.2	0.2	0.1675	0.1	0.2	0.1	0.6	0.4	9	10	0.035	0.6	0.23025	0.2
09/21/2005	0.45	0.4	0.3	0.5	0.35	0.2	0.5	0.7	1.5	0.5	10	10	0.2	1.5	0.54	0.475
09/27/2005	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	10	10	0.2	0.2	0.2	0.2
10/05/2005	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	10	10	0.2	0.3	0.24	0.2
10/11/2005	0.2	0.4	0.035 U	0.1	0.15	0.2	0.3	0.3	0.4	0.3	9	10	0.035	0.4	0.2385	0.25
10/19/2005	0.2	0.3	0.2	0.1	0.3	0.2	0.2	0.2	0.3	0.1	10	10	0.1	0.3	0.21	0.2
10/25/2005	0.2	0.4	0.3	0.3	0.5	0.9	0.3	0.4	0.6	0.5	10	10	0.2	0.9	0.44	0.4
Average	**0.268**	**0.273**	**0.237**	**0.253**	**0.266**	**0.267**	**0.282**	**0.271**	**0.435**	**0.300**						
Median	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.3**	**0.2**	**0.3**	**0.3**						
Min	**0.2**	**0.035**	**0.035**	**0.1**	**0.15**	**0.035**	**0.2**	**0.1**	**0.2**	**0.1**						
Max	**0.45**	**0.5**	**0.4**	**0.5**	**0.5**	**0.9**	**0.5**	**0.7**	**1.5**	**0.5**						
Samples	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**						
Detects	**17**	**16**	**16**	**17**	**17**	**16**	**17**	**17**	**17**	**17**						

Notes:
U indicates undetected

Table 11
Total Phosphorus Results (mg/L) from Weekly Receiving Water Monitoring Study
Potlatch Lewiston Mill

				Summary of Upstream Samples					
Sampling Date	SR-REF-S	SR-REF-MD	CR-REF-S	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	0.04	0.04	0.01	3	3	0.01	0.04	0.04	0.04
07/13/2005	0.04	0.04	0.02	3	3	0.02	0.04	0.04	0.04
07/20/2005	0.04	0.04	0.02	3	3	0.02	0.04	0.04	0.04
07/27/2005	0.04	0.04	0.007 J	3	3	0.007	0.04	0.04	0.04
08/03/2005	0.06	0.06	0.007	3	3	0.007	0.06	0.06	0.06
08/10/2005	0.06	0.07	0.009	3	3	0.009	0.07	0.07	0.06
08/17/2005	0.06	0.06	0.008	3	3	0.008	0.06	0.06	0.06
08/24/2005	0.08	0.08	0.01	3	3	0.01	0.08	0.08	0.08
08/30/2005	0.08	0.09	0.009	3	3	0.009	0.09	0.09	0.08
09/07/2005	0.09	0.08	0.01	3	3	0.01	0.09	0.09	0.08
09/15/2005	0.08	0.08	0.007	3	3	0.007	0.08	0.08	0.08
09/21/2005	0.08	0.08	0.0025 U	2	3	0.0025	0.08	0.08	0.08
09/27/2005	0.1	0.1	0.005	3	3	0.005	0.1	0.1	0.1
10/05/2005	0.09	0.12	0.006	3	3	0.006	0.12	0.12	0.09
10/11/2005	0.1	0.09	0.0025 U	2	3	0.0025	0.1	0.1	0.09
10/19/2005	0.09	0.09	0.0025 U	2	3	0.0025	0.09	0.09	0.09
10/25/2005	0.07	0.07	0.008 J	3	3	0.008	0.07	0.07	0.07
Average	**0.071**	**0.072**	**0.008**						
Median	**0.08**	**0.08**	**0.008**						
Min	**0.04**	**0.04**	**0.0025**						
Max	**0.1**	**0.12**	**0.02**						
Samples	**17**	**17**	**17**						
Detects	**17**	**17**	**14**						

											Summary of Downstream Samples					
Sampling Date	LGP-13-S	LGP-13-MD	LGP-11-S	LGP-11-MD	LGP-09-S	LGP-09-MD	LGP-06-S	LGP-06-MD	LGP-01-S	LGP-01-MD	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	0.04	0.04	0.03	0.04	0.04	0.04	0.03	0.05	0.03	0.04	10	10	0.03	0.05	0.038	0.04
07/13/2005	0.03	0.03	0.05	0.03	0.02	0.04	0.04	0.03	0.03	0.03	10	10	0.02	0.05	0.033	0.03
07/20/2005	0.04	0.02	0.03	0.04	0.04	0.03	0.04	0.03	0.05	0.04	10	10	0.02	0.05	0.036	0.04
07/27/2005	0.04	0.03	0.03	0.03	0.04	0.03	0.03	0.03	0.03	0.03	10	10	0.03	0.04	0.032	0.03
08/03/2005	0.05	0.03	0.05	0.03	0.04	0.03	0.05	0.04	0.04	0.04	10	10	0.03	0.05	0.04	0.04
08/10/2005	0.05	0.03	0.06	0.04	0.055	0.05	0.05	0.04	0.05	0.04	10	10	0.03	0.06	0.0465	0.05
08/17/2005	0.05	0.04	0.06	0.04	0.05	0.04	0.05	0.04	0.05	0.06	10	10	0.04	0.06	0.048	0.05
08/24/2005	0.06	0.05	0.07	0.06	0.065	0.06	0.06	0.06	0.06	0.06	10	10	0.05	0.07	0.0605	0.06
08/30/2005	0.07	0.05	0.07	0.05	0.07	0.05	0.07	0.07	0.06	0.06	10	10	0.05	0.07	0.062	0.065
09/07/2005	0.07	0.06	0.08	0.06	0.07	0.05	0.07	0.06	0.09	0.06	10	10	0.05	0.09	0.067	0.065
09/15/2005	0.065	0.05	0.07	0.06	0.075	0.06	0.06	0.05	0.07	0.06	10	10	0.05	0.075	0.062	0.06
09/21/2005	0.085	0.07	0.08	0.08	0.08	0.07	0.07	0.07	0.13	0.06	10	10	0.06	0.13	0.0795	0.075
09/27/2005	0.1	0.1	0.1	0.1	0.1	0.1	0.09	0.09	0.09	0.09	10	10	0.09	0.1	0.096	0.1
10/05/2005	0.11	0.09	0.09	0.09	0.105	0.09	0.09	0.08	0.08	0.08	10	10	0.08	0.11	0.0905	0.09
10/11/2005	0.11	0.1	0.11	0.09	0.12	0.11	0.11	0.08	0.1	0.1	10	10	0.08	0.12	0.103	0.105
10/19/2005	0.09	0.09	0.1	0.07	0.105	0.07	0.05	0.08	0.1	0.06	10	10	0.05	0.105	0.0815	0.085
10/25/2005	0.08	0.07	0.07	0.06	0.085	0.07	0.07	0.07	0.07	0.07	10	10	0.06	0.085	0.0715	0.07
Average	**0.067**	**0.056**	**0.068**	**0.057**	**0.068**	**0.058**	**0.061**	**0.057**	**0.066**	**0.058**						
Median	**0.065**	**0.05**	**0.07**	**0.06**	**0.07**	**0.05**	**0.06**	**0.06**	**0.06**	**0.06**						
Min	**0.03**	**0.02**	**0.03**	**0.03**	**0.02**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**						
Max	**0.11**	**0.1**	**0.11**	**0.1**	**0.12**	**0.11**	**0.11**	**0.09**	**0.13**	**0.1**						
Samples	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**						
Detects	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**						

Notes:
U indicates undetected
J indicates estimated value

Table 12
Orthophosphate Phosphorus Results (mg/L) from Weekly Receiving Water Monitoring Study
Potlatch Lewiston Mill

				Summary of Upstream Samples					
Sampling Date	SR-REF-S	SR-REF-MD	CR-REF-S	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	0.02	0.02	0.006 J	3	3	0.006	0.02	0.02	0.02
07/13/2005	0.01	0.02	0.01	3	3	0.01	0.02	0.02	0.01
07/20/2005	0.03	0.02	0.003 J	3	3	0.003	0.03	0.03	0.02
07/27/2005	0.03	0.03	0.006 J	3	3	0.006	0.03	0.03	0.03
08/03/2005	0.04	0.04	0.003	3	3	0.003	0.04	0.04	0.04
08/10/2005	0.05	0.05	0.002	3	3	0.002	0.05	0.05	0.05
08/17/2005	0.05	0.05	0.002	3	3	0.002	0.05	0.05	0.05
08/24/2005	0.06	0.06	0.005	3	3	0.005	0.06	0.06	0.06
08/30/2005	0.07	0.08	0.004	3	3	0.004	0.08	0.08	0.07
09/07/2005	0.07	0.07	0.005	3	3	0.005	0.07	0.07	0.07
09/15/2005	0.07	0.07	0.001 U	2	3	0.001	0.07	0.07	0.07
09/21/2005	0.07	0.07	0.007	3	3	0.007	0.07	0.07	0.07
09/27/2005	0.09	0.09	0.007	3	3	0.007	0.09	0.09	0.09
10/05/2005	0.07	0.08	0.007	3	3	0.007	0.08	0.08	0.07
10/11/2005	0.09	0.08	0.001 U	2	3	0.001	0.09	0.09	0.08
10/19/2005	0.07 X	0.06 X	0.001 U	2	3	0.001	0.07	0.07	0.06
10/25/2005	0.07 X	0.06 X	0.006 JX	3	3	0.006	0.07	0.07	0.06
Average	**0.056**	**0.056**	**0.004**						
Median	**0.07**	**0.06**	**0.005**						
Min	**0.01**	**0.02**	**0.001**						
Max	**0.09**	**0.09**	**0.01**						
Samples	**17**	**17**	**17**						
Detects	**17**	**17**	**14**						

											Summary of Downstream Samples					
Sampling Date	LGP-13-S	LGP-13-MD	LGP-11-S	LGP-11-MD	LGP-09-S	LGP-09-MD	LGP-06-S	LGP-06-MD	LGP-01-S	LGP-01-MD	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	10	10	0.01	0.02	0.018	0.02
07/13/2005	0.02	0.01	0.01	0.02	0.01	0.02	0.01	0.009 J	0.01 X	0.01 X	10	10	0.009	0.02	0.0129	0.01
07/20/2005	0.03	0.01	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01	10	10	0.01	0.03	0.016	0.015
07/27/2005	0.03	0.02	0.03	0.02	0.03	0.02	0.02	0.02	0.01	0.02	10	10	0.01	0.03	0.022	0.02
08/03/2005	0.04	0.02	0.03	0.02	0.03	0.02	0.03	0.03	0.02	0.02	10	10	0.02	0.04	0.026	0.025
08/10/2005	0.04	0.02	0.05	0.03	0.04	0.03	0.04	0.03	0.02	0.03	10	10	0.02	0.05	0.033	0.03
08/17/2005	0.04	0.03	0.04	0.03	0.04	0.03	0.04	0.03	0.02	0.03	10	10	0.02	0.04	0.033	0.03
08/24/2005	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.05	0.04	0.04	10	10	0.04	0.05	0.045	0.045
08/30/2005	0.055	0.04	0.06	0.04	0.06	0.04	0.06	0.05	0.05	0.04	10	10	0.04	0.06	0.0495	0.05
09/07/2005	0.06	0.05	0.07	0.05	0.06	0.04	0.06	0.05	0.03	0.05	10	10	0.03	0.07	0.052	0.05
09/15/2005	0.06	0.04	0.06	0.05	0.065	0.05	0.05	0.04	0.06	0.05	10	10	0.04	0.065	0.0525	0.05
09/21/2005	0.07	0.06	0.07	0.07	0.07	0.06	0.06	0.06	0.01	0.05	10	10	0.01	0.07	0.058	0.06
09/27/2005	0.09	0.085	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	10	10	0.08	0.09	0.0845	0.0825
10/05/2005	0.08	0.08	0.08	0.08	0.095	0.08	0.07	0.07	0.07	0.07	10	10	0.07	0.095	0.0775	0.08
10/11/2005	0.09	0.07	0.08	0.06	0.1	0.09	0.1	0.06	0.08	0.09	10	10	0.06	0.1	0.082	0.085
10/19/2005	0.07	0.07	0.08	0.07	0.07	0.06	0.05	0.07	0.08	0.06	10	10	0.05	0.08	0.068	0.07
10/25/2005	0.06	0.04	0.06 X	0.06 X	0.055	0.04	0.05	0.05	0.04	0.05	10	10	0.04	0.06	0.0505	0.05
Average	**0.053**	**0.041**	**0.053**	**0.045**	**0.053**	**0.043**	**0.048**	**0.043**	**0.038**	**0.042**						
Median	**0.055**	**0.04**	**0.06**	**0.04**	**0.055**	**0.04**	**0.05**	**0.05**	**0.03**	**0.04**						
Min	**0.02**	**0.01**	**0.01**	**0.02**	**0.01**	**0.01**	**0.01**	**0.009**	**0.01**	**0.01**						
Max	**0.09**	**0.085**	**0.09**	**0.09**	**0.1**	**0.09**	**0.1**	**0.08**	**0.08**	**0.09**						
Samples	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**						
Detects	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**						

Notes:
U indicates undetected
J indicates estimated value
X - Holding time exceeded

Table 13
2,3,7,8-TCDD Results (pg/L) from Weekly Receiving Water Monitoring Study
Potlatch Lewiston Mill

				Summary of Upstream Samples					
Sampling Date	SR-REF-S	SR-REF-MD	CR-REF-S	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
07/13/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
07/20/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
07/27/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
08/03/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
08/10/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
08/17/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
08/24/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
08/30/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
09/07/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
09/15/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
09/21/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
09/27/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
10/05/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
10/11/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
10/19/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
10/25/2005	0.2 U	0.2 U	0.2 U	0	3	ND	ND	ND	ND
Average	**0.482**	**0.482**	**0.482**						
Median	**0.5**	**0.5**	**0.5**						
Min	**0.2**	**0.2**	**0.2**						
Max	**0.5**	**0.5**	**0.5**						
Samples	**17**	**17**	**17**						
Detects	**0**	**0**	**0**						

											Summary of Downstream Samples					
Sampling Date	LGP-13-S	LGP-13-MD	LGP-11-S	LGP-11-MD	LGP-09-S	LGP-09-MD	LGP-06-S	LGP-06-MD	LGP-01-S	LGP-01-MD	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
07/13/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
07/20/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
07/27/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
08/03/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
08/10/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
08/17/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
08/24/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
08/30/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
09/07/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
09/15/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
09/21/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
09/27/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
10/05/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
10/11/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
10/19/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
10/25/2005	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0	10	ND	ND	ND	ND
Average	**0.482**	**0.482**	**0.482**	**0.482**	**0.482**	**0.482**	**0.482**	**0.482**	**0.482**	**0.482**						
Median	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**						
Min	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**						
Max	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**						
Samples	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**						
Detects	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**						

Notes:
U indicates undetected
J indicates estimated value

Table 14
2,3,7,8-TCDF Results (pg/L) from Weekly Receiving Water Monitoring Study
Potlatch Lewiston Mill

				Summary of Upstream Samples					
Sampling Date	SR-REF-S	SR-REF-MD	CR-REF-S	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
07/13/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
07/20/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
07/27/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
08/03/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
08/10/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
08/17/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
08/24/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
08/30/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
09/07/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
09/15/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
09/21/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
09/27/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
10/05/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
10/11/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
10/19/2005	0.5 U	0.5 U	0.5 U	0	3	ND	ND	ND	ND
10/25/2005	0.2 U	0.2 U	0.2 U	0	3	ND	ND	ND	ND
Average	**0.482**	**0.482**	**0.482**						
Median	**0.5**	**0.5**	**0.5**						
Min	**0.2**	**0.2**	**0.2**						
Max	**0.5**	**0.5**	**0.5**						
Samples	**17**	**17**	**17**						
Detects	**0**	**0**	**0**						

											Summary of Downstream Samples					
Sampling Date	LGP-13-S	LGP-13-MD	LGP-11-S	LGP-11-MD	LGP-09-S	LGP-09-MD	LGP-06-S	LGP-06-MD	LGP-01-S	LGP-01-MD	Detects	Samples	Minimum	Maximum	Average	Median
07/07/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
07/13/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
07/20/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
07/27/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
08/03/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
08/10/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
08/17/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
08/24/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
08/30/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
09/07/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
09/15/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
09/21/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
09/27/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
10/05/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
10/11/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
10/19/2005	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0	10	ND	ND	ND	ND
10/25/2005	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0	10	ND	ND	ND	ND
Average	**0.482**	**0.482**	**0.482**	**0.482**	**0.482**	**0.482**	**0.482**	**0.482**	**0.482**	**0.482**						
Median	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**						
Min	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**						
Max	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**						
Samples	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**						
Detects	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**						

Notes:
U indicates undetected
J indicates estimated value

Table 15
Resin Acid Results from the Quarterly Surface Water and Effluent Monitoring Study
Potlatch Lewiston Mill

Resin Acids (ug/L)	CR-REF		SR REF		LGP-14		LGP-13		LGP-11		LGP-09		LGP-06		LGP-01		**Detects**	**Samples**	**Minimum**	**Maximum**	**Average**	**Median**	EFFA - Dissolved		EFFA Total	
Abietic Acid	0.021	J	0.009	J	0.021	J	0.0265	J	0.021	J	0.035	J	0.034	J	0.02	J	**8**	**8**	**0.009**	**0.035**	**0.0234375**	**0.021**	0.373		5.08	
Dehydroabietic Acid	0.011	U	0.0085	U	0.011	U	0.01475	U	0.0105	U	0.013	U	0.013	U	0.011	U	**0**	**8**	**ND**	**ND**	**ND**	**ND**	0.044	U	0.47	
Isopimaric Acid	0.003	J	0.002	J	0.0015	U	0.00225	U	0.003	J	0.006	J	0.005	J	0.003	J	**6**	**8**	**0.0015**	**0.006**	**0.00321875**	**0.003**	0.074	J	2.56	
Neoabietic Acid	0.01485	U	0.015	U	0.01485	U	0.0146	U	0.01485	U	0.01485	U	0.01485	U	0.0147	U	**0**	**8**	**ND**	**ND**	**ND**	**ND**	0.006	J	0.063	J
Palustric Acid	0.0005	U	0.01965	U	0.0195	U	0.0005	U	0.0005	U	0.001	U	0.0005	U	0.0193	U	**0**	**8**	**ND**	**ND**	**ND**	**ND**	0.009	U	0.1415	U
Pimaric Acid	0.001	U	0.001	U	0.001	U	0.002	U	0.001	U	0.002	U	0.002	U	0.0015	U	**0**	**8**	**ND**	**ND**	**ND**	**ND**	0.064	J	3.15	
Sandaracopimaric Acid	0.0005	U	0.02655	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	**0**	**8**	**ND**	**ND**	**ND**	**ND**	0.015	J	0.124	
Total 12/14-Chlorodehydroabietic Acid	0.0275	U	0.02775	U	0.0275	U	0.02725	U	0.0275	U	0.0275	U	0.0275	U	0.02725	U	**0**	**8**	**ND**	**ND**	**ND**	**ND**	0.028	J	0.08	J

Notes:
U indicates undetected
J indicates estimated value

Table 16
Phytosterol Results from the Quarterly Surface Water and Effluent Monitoring Study
Potlatch Lewiston Mill

Phytosterols (ug/L)	CR-REF	SR REF	LGP-14	LGP-13	LGP-11	LGP-09	LGP-06	LGP-01	**Detects**	**Samples**	**Minimum**	**Maximum**	**Average**	**Median**	EFFA - Dissolved	EFFA Total
B-sitosterol	0.46 J	0.563 J	1.36 J	1.1985 J	0.632 J	0.679 J	0.596 J	3.39	**8**	**8**	**0.46**	**3.39**	**1.109813**	**0.656**	24.2	68.3
Campesterol	0.038 J	0.05 J	0.059 J	0.0635 J	0.044 J	0.054 J	0.046 J	0.27	**8**	**8**	**0.038**	**0.27**	**0.078063**	**0.052**	1.41	4.45
Stigmastanol	0.3441 U	0.3474 U	0.3441 U	0.34575 U	0.3441 U	0.3441 U	0.3441 U	0.3441 U	**0**	**8**	**ND**	**ND**	**ND**	**ND**	3.96	9.5
Stigmasterol	0.034 U	0.06 J	0.076 J	0.082 J	0.06 J	0.07 J	0.062 J	0.331	**7**	**8**	**0.034**	**0.331**	**0.096875**	**0.066**	0.584	3.18
Retene	0.0005 U	0.0005 U	0.0015 U	0.0015 U	0.0025 U	0.0005 U	0.0005 U	0.001 U	**0**	**8**	**ND**	**ND**	**ND**	**ND**	0.003 U	0.005 U

Notes:
U indicates undetected
J indicates estimated value

Figure 17
Chlorophenol Results from the Quarterly Surface Water and Effluent Monitoring Study
Potlatch Lewiston Mill

Chlorophenolics	CR-REF	SR REF	LGP-14	LGP-13	LGP-11	LGP-09	LGP-06	LGP-01	**Detects**	**Samples**	**Minimum**	**Maximum**	**Average**	**Median**	EFFA - Dissolved	EFFA Total
2,4,6-Trichlorophenol	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	**0**	**10**	**ND**	**ND**	**ND**	**ND**	0.0505 U	0.0545 U
2,4,5-Trichlorophenol	0.0002 U	0.0002 U	0.0005 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	**0**	**10**	**ND**	**ND**	**ND**	**ND**	0.0002 U	0.0002 U
2,3,4,6-Tetrachlorophenol	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	**0**	**10**	**ND**	**ND**	**ND**	**ND**	0.0002 U	0.0002 U
3,4,6-Trichlorocatechol	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	**0**	**10**	**ND**	**ND**	**ND**	**ND**	0.0002 U	0.0002 U
3,4,5-Trichlorocatechol	0.0002 U	0.0002 U	0.0002 U	0.00085 U	0.004 U	0.0025 U	0.0002 U	0.0002 U	**0**	**10**	**ND**	**ND**	**ND**	**ND**	0.116 U	0.3375 U
3,4,6-Trichoroguaiacol	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	**0**	**10**	**ND**	**ND**	**ND**	**ND**	0.0075 U	0.0035 U
3,4,5-Trichloroguaiacol	0.0005 U	0.0003 U	0.0003 U	0.0003 U	0.0005 U	0.0003 U	0.0005 U	0.0003 U	**0**	**10**	**ND**	**ND**	**ND**	**ND**	0.0155 U	0.0255 U
Trichlorosyringol	0.001 U	0.0005 U	0.0005 U	0.0005 U	0.0015 U	0.001 U	0.001 U	0.001 U	**0**	**10**	**ND**	**ND**	**ND**	**ND**	0.004 U	0.0035 U
4,5,6-Trichloroguaiacol	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0005 U	0.0002 U	**0**	**10**	**ND**	**ND**	**ND**	**ND**	0.0145 U	0.0525 U
Pentachlorophenol	0.002 U	0.002 U	0.002 U	0.0015 U	0.0015 U	0.002 U	0.003 U	0.002 U	**0**	**10**	**ND**	**ND**	**ND**	**ND**	0.0002 U	0.0002 U
Tetrachloroguaiacol	0.00145 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	**0**	**10**	**ND**	**ND**	**ND**	**ND**	0.002 U	0.00145 U
Tetrachlorocatechol	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.002 U	0.0003 U	**0**	**10**	**ND**	**ND**	**ND**	**ND**	0.0003 U	0.0003 U

Notes:
U indicates undetected

Table 18
Chloroform Results from the Quarterly Surface Water and Effluent Monitoring Study
Potlatch Lewiston Mill

	CR-REF	SR REF	LGP-14	LGP-13	LGP-11	LGP-09	LGP-06	LGP-01	EFFA	**Detects**	**Samples**	**Minimum**	**Maximum**	**Average**	**Median**
Chloroform (ug/L)	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.19 J	1.08	2	9	0.07	1.08	0.195556	0.07

Notes:
U indicates undetected
J indicates estimated value

Table 19
Dissolved Organic Carbon (DOC) and Total Organic Carbon (TOC) Results from the Quarterly Surface Water and Effluent Monitoring Study
Potlatch Lewiston Mill

	CR-REF	SR REF	LGP-14	LGP-13	LGP-11	LGP-09	LGP-06	LGP-01	EFFA	**Detects**	**Samples**	**Minimum**	**Maximum**	**Average**	**Median**
DOC (mg/L)	1.9	2.7	2.5	2.5	11.8	2.6	2.8	3.1	125	9	9	1.9	125	17.21111	2.7
TOC (mg/L)	2.1	2.8	2.9	2.6	2.8	2.9	2.9	2.9	150	9	9	2.1	150	19.1	2.9

Table 20
Dioxin and Furan Congener Results from the Quarterly Surface Water and Effluent Monitoring Study
Potlatch Lewiston Mill

Congener	CR-REF	SR REF	LGP-14	LGP-13	LGP-11	LGP-09	LGP-06	LGP-01	Detects	Samples	Minimum	Maximum	Average	Median	EFFA - Dissolved (pg/L	EFFA Total (pg/g)
Dioxins (pg/L)																
2,3,7,8-TCDD	0.00125 U	0.00125 U	0.00125 U	0.022	0.00125 U	0.00125 U	0.00125 U	0.00125 U	**1**	**8**	**0.001**	**0.022**	**0.004**	**0.001**	0.0015 U	0.28981481 U
1,2,3,7,8-PeCDD	0.00125 U	0.00125 U	0.00125 U	0.051 J	0.00125 U	0.00125 U	0.002125	0.00125 U	**2**	**8**	**0.001**	**0.051**	**0.008**	**0.001**	0.00125 U	1.74074074
1,2,3,4,7,8-HxCDD	0.003 J	0.003 J	0.003 J	0.008 J	0.002 U	0.003 J	0.0025	0.00125 U	**6**	**8**	**0.001**	**0.008**	**0.003**	**0.003**	0.003 J	1.01851852 U
1,2,3,6,7,8-HxCDD	0.002 U	0.0075 U	0.016 J	0.04 J	0.007 J	0.011 J	0.006 U	0.012 J	**5**	**8**	**0.002**	**0.040**	**0.013**	**0.009**	0.002 U	1.41666667 U
1,2,3,7,8,9-HxCDD	0.004 J	0.011 J	0.011 J	0.038 J	0.007 J	0.007 J	0.0085	0.008 J	**8**	**8**	**0.004**	**0.038**	**0.012**	**0.008**	0.003 J	1.55555556 U
1,2,3,4,6,7,8-HpCDD	0.056 J	0.214	0.186	0.151	0.128	0.203	0.148	0.266	**8**	**8**	**0.056**	**0.266**	**0.169**	**0.169**	0.0215 U	21.6666667
OCDD	0.307	0.81	0.902	0.478	0.748	1.01	0.8505	1.66	**8**	**8**	**0.307**	**1.660**	**0.846**	**0.830**	0.0795 U	124.444444
Furans (pg/L)																
2,3,7,8-TCDF	0.00125 U	0.002 U	0.006 J	0.006 J	0.006 J	0.005 J	0.005	0.004 J	**6**	**8**	**0.001**	**0.006**	**0.004**	**0.005**	0.025	9.05555556
1,2,3,7,8-PeCDF	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.003	0.00125 U	**1**	**8**	**0.001**	**0.003**	**0.001**	**0.001**	0.005 J	2.59259259
2,3,4,7,8-PeCDF	0.00125 U	0.00125 U	0.0015 U	0.003 J	0.003 J	0.003 J	0.0015 U	0.00125 U	**3**	**8**	**0.001**	**0.003**	**0.002**	**0.002**	0.003 J	2.85185185
1,2,3,4,7,8-HxCDF	0.00125 U	0.0025 U	0.006 J	0.0015 U	0.005 J	0.004 J	0.004	0.0015 U	**4**	**8**	**0.001**	**0.006**	**0.003**	**0.003**	0.0015 U	1.24074074 U
1,2,3,6,7,8-HxCDF	0.00125 U	0.0015 U	0.003 J	0.00125 U	0.004 J	0.003 J	0.0035	0.00125 U	**4**	**8**	**0.001**	**0.004**	**0.002**	**0.002**	0.00125 U	1.01851852 U
1,2,3,7,8,9-HxCDF	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	**0**	**8**	**ND**	**ND**	**ND**	**ND**	0.00125 U	1.15740741 U
2,3,4,6,7,8-HxCDF	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.002125	0.00125 U	**1**	**8**	**0.001**	**0.002**	**0.001**	**0.001**	0.00125 U	0.86296296 U
1,2,3,4,6,7,8-HpCDF	0.006 J	0.018 J	0.028 J	0.007 U	0.018 J	0.022 J	0.025	0.03 J	**7**	**8**	**0.006**	**0.030**	**0.019**	**0.020**	0.003 J	4.87037037
1,2,3,4,7,8,9-HpCDF	0.00125 U	0.00125 U	0.00125 U	0.00125 U	0.003 J	0.00125 U	0.001375 U	0.00125 U	**1**	**8**	**0.001**	**0.003**	**0.001**	**0.001**	0.00125 U	0.82685185 U
OCDF	0.011 J	0.02 J	0.026 J	0.007 J	0.024 J	0.037 J	0.0375	0.045 J	**8**	**8**	**0.007**	**0.045**	**0.026**	**0.025**	0.003 J	5.2962963

Notes:
U indicates undetected
J indicates estimated value